



March 10, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

EPA Region 5 Records Ctr.



226814

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

**WORK COMPLETED MARCH 3-7, 2003**

1. A small exclusion zone in grid 7 was excavated on Tuesday March 4, 2003. Area air monitoring was conducted during the excavation. The table below summarizes the quantity of radiologically-impacted material excavated on March 4 and the cumulative total for the project.

**Impacted Soil Loading Summary**

Containers Loaded March 4, 2003	Cumulative Project Total
1	177

2. The USEPA conducted a verification survey in grid 7 on Thursday March 6, 2002. An approved notice of successful verification was obtained from the USEPA for the grid 7 exclusion zone on Friday March 7, 2003.
3. Grading phase (Phase III) gamma surveys of the historical fill were completed in the eastern portions of grids 15, 24 and 33 with no elevated gamma readings observed. The table below summarizes the grids in which lift surveys have been completed (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

Status	Grid Locations
Complete	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40

4. The historical fill outside of the former slips has been surveyed (Phase III) as described in the Work Plan<sup>1</sup>. Grids 6, 14, 23 and 32, along with the western portion of grids 15, 24 and 33, are not included within the current Lakeshore East Development parcel (refer to Figure 1). As such, survey activities will not be completed on these offsite parcels.

<sup>1</sup> STS (revised September 30, 2002) Work Plan for Investigation and Removal of Radiologically Impacted Soil. Lakeshore East LLC. 221 N. Columbus Drive, Chicago, Illinois.

5. Area air monitoring was conducted only on March 4 during the remediation of the exclusion zone in grid 7. Results of this area air monitoring and the personal air monitoring conducted between March 3 and 7 will be provided with the next weekly report.
6. Personal air monitoring results for activities conducted between February 24 and 28 indicate no exceedances of the allowable limits (see attached).

**PLANNED WORK FOR THE MARCH 10-14, 2003**

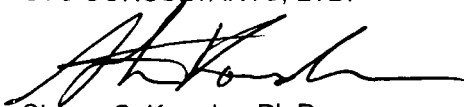
1. The grading phase (lift) surveys of historical fill (Phase III) are complete. A letter will be submitted to the USEPA indicating the completion of the Phase II (remediation of identified radiologically-impacted materials) and Phase III (lift survey) activities. The letter will request that the USEPA approve the initiation of the closure report activities.
2. Construction/infrastructure related activities will commence at the site. Activities involving the excavation of material within the former slips will be surveyed for elevated gamma radiation as the explorations proceed. The USEPA will be notified upon discovery of radiologically-impacted material within the former slips.

We request authorization from the USEPA that the issuance of weekly reports for the Lakeshore East project be discontinued since Phase II and Phase III related field activities are complete. Monthly reports will continue to be submitted to the USEPA until submittal of the closure report. We request receipt of written authorization providing your concurrence.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

**Attachments**

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

## North Monitor

Week #21 2/24/03-2/28/03

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/24/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/25/03	0	0.00E+00	0.00E+00	
2/26/03	0	0.00E+00	0.00E+00	
2/27/03	0	0.00E+00	0.00E+00	
2/28/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/24/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/25/03	0	0.00E+00	0.00E+00	
2/26/03	0	0.00E+00	0.00E+00	
2/27/03	0	0.00E+00	0.00E+00	
2/28/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (South) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/24/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/25/03	0	0.00E+00	0.00E+00	
2/26/03	0	0.00E+00	0.00E+00	
2/27/03	0	0.00E+00	0.00E+00	
2/28/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (East) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/24/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/25/03	0	0.00E+00	0.00E+00	
2/26/03	0	0.00E+00	0.00E+00	
2/27/03	0	0.00E+00	0.00E+00	
2/28/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!



# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 21

February 24, 2003 - February 28, 2003

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 21 February 24 - February 28, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
2/24/03	Lindsay Aschim	PAM2172	008-234	2.5	349	872500	2/25/03	9	12	0.00	0.00E+00
2/24/03	Jerry Krane	PAM2173	002-766	2.5	501	1252500	2/25/03	11	12	0.00	0.00E+00
2/25/03	Jerry Krane	PAM2174	002-574	2.5	471	1177500	2/26/03	10	11	0.00	0.00E+00
2/25/03	Tim O'Brien	PAM2175	002-766	2.5	474	1185000	2/26/03	14	11	0.10	2.13E-14 *
2/26/03	Lindsay Aschim	PAM2176	002-766	2.5	473	1182500	2/27/03	17	9	0.27	5.69E-14 *
2/26/03	Tim O'Brien	PAM2177	008-234	2.5	283	707500	2/27/03	19	9	0.33	1.19E-13 *
2/27/03	Tim O'Brien	PAM2178	002-574	2.5	479	1197500	2/28/03	13	13	0.00	0.00E+00
2/27/03	Jerry Krane	PAM2179	006-234	2.5	477	1192500	2/28/03	10	13	0.00	0.00E+00
2/28/03	Lindsay Aschim	PAM2180	002-766	2.5	495	1237500	3/3/03	11	12	0.00	0.00E+00
2/28/03	Jerry Krane	PAM2181	006-234	2.5	492	1230000	3/3/03	10	12	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 21 February 24 - February 28, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

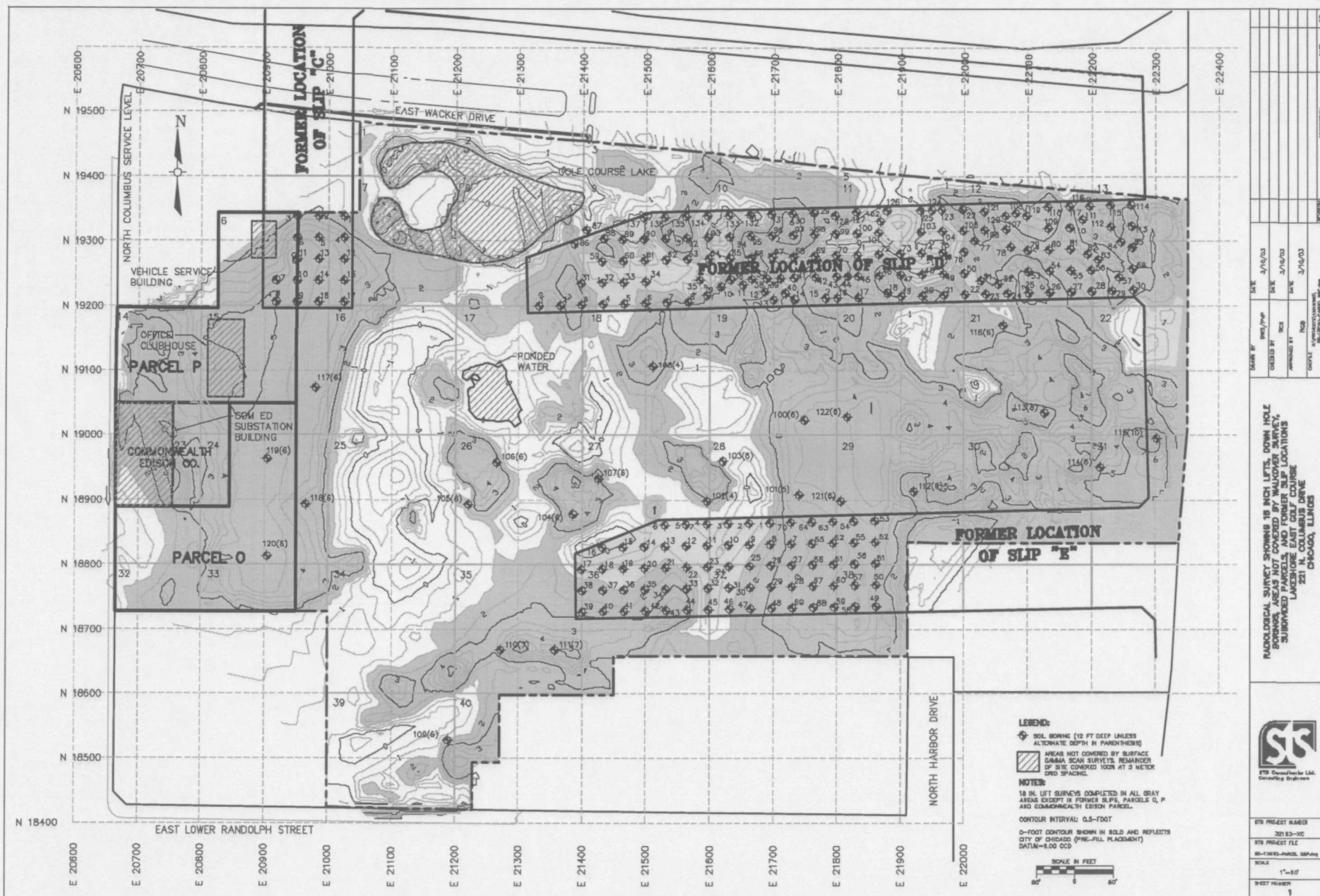
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
2/25/03	Tim O'Brien	PAM2175	002-766	2.5	474	1185000	3/3/03	11	12	0.00	0.00E+00	0.00%
2/26/03	Lindsay Aschim	PAM2176	002-766	2.5	473	1182500	3/3/03	9	12	0.00	0.00E+00	0.00%
2/26/03	Tim O'Brien	PAM2177	006-234	2.5	283	707500	3/3/03	12	12	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 =  $5E-13$  uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC =  $1.5E-13$  uCi/ml



RADIOLOGICAL SURVEY SPONSOR 18 INCH LIFT, DOWN HOLE SPONSOR 18 INCH LIFT, DOWN HOLE		DATE	DATE
SUBMITTED PARCELS AND FORMER MAP LOCATIONS		DATE	DATE
LAKESHORE EAST GOLF COURSE		DATE	DATE
221 N. COLUMBUS DRIVE		DATE	DATE
CHICAGO, ILLINOIS		DATE	DATE
STB PRESENT NAME		DATE	DATE
301 E3-MC		DATE	DATE
STB PRESENT FILE		DATE	DATE
05-11103-PARCEL, SURVEY		DATE	DATE
SCALE		DATE	DATE
1"=50'		DATE	DATE
SHEET NUMBER		DATE	DATE
1		DATE	DATE



March 3, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

**WORK COMPLETED FEBRUARY 24-28, 2003**

1. No soil excavation was conducted. The table below summarizes the quantity of radiologically-impacted material excavated during the project.

**Impacted Soil Loading Summary**

Containers Loaded February 24-28, 2003	Cumulative Project Total
0	176

2. Grading phase gamma surveys of the historical fill were completed in grids 18, 19 and 36 with no elevated gamma readings observed. Lift surveys are now being conducted in grid 33 at the western edge of the property. The table below summarizes the status of the lift surveys at the project site (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

Status	Grid Locations
Complete	1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 22, 25, 26, 27, 28, 29, 30, 31, 34, 35, 37, 38, 39, 40
In Progress	7, 33
Remaining	15, 24

3. No area air monitoring was conducted during the week of February 24. Results of the personal air monitoring conducted between February 24 and 28 will be provided with the next weekly report.
4. Personal air monitoring results for activities conducted between February 17 and 21 indicate no exceedances of the allowable limits (see attached).
5. People's Gas was onsite to excavate test pits in the grid 9 area. Excavation activities were monitored for the presence of radiologically impacted material. No elevated gamma readings were observed.

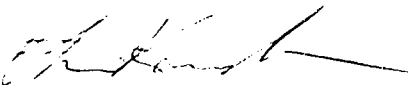
#### PLANNED WORK FOR THE MARCH 3-7, 2003

1. The grading phase (lift) surveys of historical fill will continue in grids 15, 24 and 33. Personal air monitoring will be conducted during the lift survey activities.
2. A small exclusion zone in grid 7 will likely be excavated on Tuesday March 4. Area air monitoring will be conducted in the event that excavation is conducted. Lift survey activities will be completed in grid 7 following the remediation of this exclusion zone area.
3. The USEPA will be contacted to conduct a verification survey following remediation of the impacted soil in grid 7.
4. Test pits for locating utilities may be conducted at the project site. The areas will be surveyed for elevated gamma radiation as the explorations proceed.
5. Completion of lift surveys in the grids 15, 24 and 33 will conclude the Phase III portion of the Workplan. The USEPA will be notified of the completion of the Phase III activities and the initiation of work on the Site Closure Report.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc Kara Hughes Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

## Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**North Monitor**      **Week #20 2/17/03-2/21/03**      **(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/17/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/18/03	0	0.00E+00	0.00E+00	
2/19/03	0	0.00E+00	0.00E+00	
2/20/03	0	0.00E+00	0.00E+00	
2/21/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

**Effluent Concentration (North) =**      **#DIV/0! uCi/ml**

**Percentage of Release Limit of =**      **#DIV/0!**  
**4E-15uCi/ml**

**South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/17/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/18/03	0	0.00E+00	0.00E+00	
2/19/03	0	0.00E+00	0.00E+00	
2/20/03	0	0.00E+00	0.00E+00	
2/21/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

**Effluent Concentration (South) =**      **#DIV/0! uCi/ml**

**Percentage of Release Limit of =**      **#DIV/0!**  
**4E-15uCi/ml**

**East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/17/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/18/03	0	0.00E+00	0.00E+00	
2/19/03	0	0.00E+00	0.00E+00	
2/20/03	0	0.00E+00	0.00E+00	
2/21/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

**Effluent Concentration (East) =**      **#DIV/0! uCi/ml**

**Percentage of Release Limit of =**      **#DIV/0!**  
**4E-15uCi/ml**

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/17/03	0	0.00E+00	0.00E+00	<b>No Area Air Monitoring This Week</b>
2/18/03	0	0.00E+00	0.00E+00	
2/19/03	0	0.00E+00	0.00E+00	
2/20/03	0	0.00E+00	0.00E+00	
2/21/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!



**Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)***Lakeshore East Project - 221 North Columbus Drive, Chicago, IL***Week 20****February 17, 2003 - February 21, 2003**

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	

## Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 20 February 17 - February 21, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
2/17/03	Tim O'Brien	PAM2162	006-234	2.5	453	1132500	2/18/03	18	11	0.23	5.20E-14
2/17/03	Jerry Krane	PAM2163	002-766	2.5	473	1182500	2/18/03	11	11	0.00	0.00E+00
2/18/03	Lindsay Aschim	PAM2164	002-766	2.5	490	1225000	2/19/03	10	10	0.00	0.00E+00
2/18/03	Tim O'Brien	PAM2165	006-234	2.5	492	1230000	2/19/03	9	10	0.00	0.00E+00
2/19/03	Jerry Krane	PAM2166	006-234	2.5	484	1210000	2/20/03	8	11	0.00	0.00E+00
2/19/03	Lindsay Aschim	PAM2167	002-766	2.5	365	912500	2/20/03	11	11	0.00	0.00E+00
2/20/03	Jerry Krane	PAM2168	006-234	2.5	482	1205000	2/21/03	11	11	0.00	0.00E+00
2/20/03	Tim O'Brien	PAM2169	002-766	2.5	481	1202500	2/21/03	9	11	0.00	0.00E+00
2/21/03	Lindsay Aschim	PAM2170	002-766	2.5	375	937500	2/24/03	9	10	0.00	0.00E+00
2/21/03	Jerry Krane	PAM2171	006-234	2.5	463	1157500	2/24/03	10	10	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 20 February 17 - February 21, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

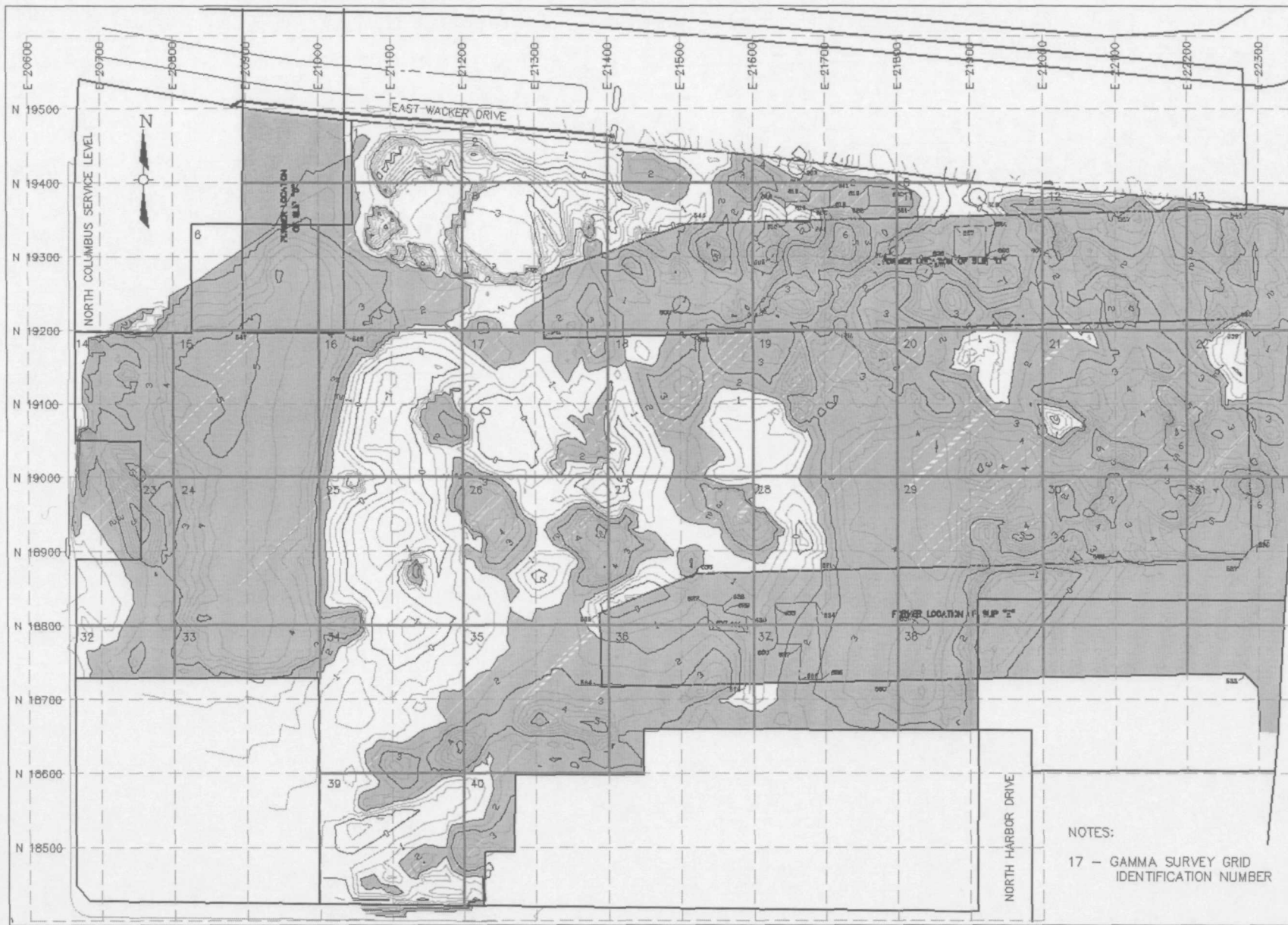
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
2/17/03	Tim O'Brien	PAM2162	006-234	2.5	453	1132500	2/21/03	8	11	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER



STS Consultants Ltd.  
Consulting Engineers

STS PROJECT NO.  
32193-XC

STS PROJECT FILE  
GG-132193-2.dwg

SCALE  
1"=120'

FIGURE NO.  
1

GRADING PHASE GAMMA SURVEY GRID  
NETWORK  
LAKE SHORE EAST GOLF COURSE  
221 N. COLUMBUS DRIVE  
CHICAGO, ILLINOIS

DRAWN BY	PVP	DATE	12/02/02
CHECKED BY	RGB	DATE	12/02/02
APPROVED BY	SGT	DATE	12/02/02
GAUFFLE	X:\PROJECTS\132193\GG-132193-2.dwg		

11/27/2002 12:

February 24, 2003

Ms. Verneta Simon, On-Scene Coordinator  
 Mr. Fred Micke, On-Scene Coordinator  
 U.S. Environmental Protection Agency, Region 5  
 77 W. Jackson Boulevard, SE-5J  
 Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

**WORK COMPLETED FEBRUARY 17-21, 2003**

1. No soil excavation was conducted. The table below summarizes the quantity of radiologically-impacted material excavated during the project.

<b>Impacted Soil Loading Summary</b>	
<b>Containers Loaded February 17-21, 2003</b>	<b>Cumulative Project Total</b>
0	176

2. Grading phase gamma surveys of the historical fill were completed in grid 20 with no elevated gamma readings observed. Lift surveys are being conducted in grid 19. No elevated gamma readings have been observed in grid 19 with approximately 30-50% of the grid complete. The table below summarizes the status of the lift surveys at the project site (refer to Figure 1 for the grid locations).

<b>Grading Phase Survey Status Lakeshore East</b>	
<b>Status</b>	<b>Grid Locations</b>
Complete	1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 20, 21, 22, 25, 26, 27, 28, 29, 30, 31, 34, 35, 37, 38, 39, 40
In Progress	7, 19, 36
Remaining	15, 18, 24, 33

3. No area air monitoring was conducted during the week of February 17. Results of the personal air monitoring conducted between February 17 and 21 will be provided with the next weekly report.
4. Personal air monitoring results for activities conducted between February 10 and 14 indicate no exceedances of the allowable limits (see attached).
5. Fill soil from off-site continues to be imported. A composite sample of the fill tested for radioactivity indicated a total radium result of 3.14 pCi/g, which below the total radium criteria of 3.7 pCi/g established for imported fill by the USEPA (see attached results). In accordance with Work Plan the fill soils from each borrow source will be tested at least once per 10,000 cubic yard.

### PLANNED WORK FOR THE FEBRUARY 24- 28, 2003

1. No excavation activities are currently planned for the week. Thus, pursuant to USEPA approval, area air monitoring will not be conducted.
2. The grading phase (lift) surveys of historical fill will continue. Personal air monitoring will be conducted during the lift survey activities.
3. A small exclusion zone in grid 7 may be excavated late in week. Lift survey activities will be completed in grid 7 following the remediation of this exclusion zone area. In the event that this area is excavated, area air monitoring will be conducted.
4. Test pits for locating utilities may be conducted at the project site. The areas will be surveyed for elevated gamma radiation as the explorations proceed.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards

STS CONSULTANTS. LTD

*Handwritten signature*

Steven C. Kornder, Ph.D.  
Senior Project Geochemist

## Attachments

cc Kara Hughes, Lakeshore East LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Alzheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**North Monitor****Week #19 2/10/03-2/14/03****(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/10/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/11/03	0	0.00E+00	0.00E+00	
2/12/03	0	0.00E+00	0.00E+00	
2/13/03	0	0.00E+00	0.00E+00	
2/14/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (North) =** #DIV/0! uCi/mlPercentage of Release Limit of = #DIV/0!  
4E-15uCi/ml**South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/10/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/11/03	0	0.00E+00	0.00E+00	
2/12/03	0	0.00E+00	0.00E+00	
2/13/03	0	0.00E+00	0.00E+00	
2/14/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (South) =** #DIV/0! uCi/mlPercentage of Release Limit of = #DIV/0!  
4E-15uCi/ml**East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/10/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/11/03	0	0.00E+00	0.00E+00	
2/12/03	0	0.00E+00	0.00E+00	
2/13/03	0	0.00E+00	0.00E+00	
2/14/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (East) =** #DIV/0! uCi/mlPercentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/10/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/11/03	0	0.00E+00	0.00E+00	
2/12/03	0	0.00E+00	0.00E+00	
2/13/03	0	0.00E+00	0.00E+00	
2/14/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!



# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 19

February 10, 2003 - February 14, 2003

Week 19							February 10, 2003 - February 14, 2003										
Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 19 February 10 - February 14, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
2/10/03	Tim O'Brien	PAM2152	006-234	2.5	475	1187500	2/11/03	21	10	0.37	7.79E-14*
2/10/03	Lindsay Aschim	PAM2153	002-766	2.5	502	1255000	2/11/03	17	10	0.23	4.68E-14*
2/11/03	Lindsay Aschim	PAM2154	006-234	2.5	429	1072500	2/12/03	28	10	0.53	1.25E-13*
2/11/03	Jerry Krane	PAM2155	002-766	2.5	456	1140000	2/12/03	35	10	0.83	1.84E-13*
2/12/03	Lindsay Aschim	PAM2156	006-234	2.5	478	1195000	2/13/03	21	11	0.33	7.04E-14*
2/12/03	Tim O'Brien	PAM2157	002-766	2.5	480	1150000	2/13/03	19	11	0.27	5.85E-14*
2/13/03	Jerry Krane	PAM2158	006-234	2.5	491	1227500	2/14/03	19	12	0.23	4.80E-14*
2/13/03	Lindsay Aschim	PAM2159	002-766	2.5	480	1200000	2/14/03	24	12	0.40	8.41E-14*
2/14/03	Jerry Krane	PAM2160	002-766	2.5	149	372500	2/17/03	9	13	0.00	0.00E+00
2/14/03	Tim O'Brien	PAM2161	006-234	2.5	151	377500	2/17/03	12	13	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 19 February 10 - February 14, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
2/10/03	Tim O'Brien	PAM2152	006-234	2.5	475	1187500	2/14/03	11	12	0.00	0.00E+00	0.00%
2/10/03	Lindsay Aschim	PAM2153	002-766	2.5	502	1255000	2/14/03	12	12	0.00	0.00E+00	0.00%
2/11/03	Lindsay Aschim	PAM2154	006-234	2.5	429	1072500	2/17/03	13	13	0.00	0.00E+00	0.00%
2/11/03	Jerry Krane	PAM2155	002-766	2.5	456	1140000	2/17/03	11	13	0.00	0.00E+00	0.00%
2/12/03	Lindsay Aschim	PAM2156	006-234	2.5	478	1195000	2/17/03	9	13	0.00	0.00E+00	0.00%
2/12/03	Tim O'Brien	PAM2157	002-766	2.5	460	1150000	2/17/03	12	13	0.00	0.00E+00	0.00%
2/13/03	Jerry Krane	PAM2158	006-234	2.5	491	1227500	2/18/03	10	11	0.00	0.00E+00	0.00%
2/13/03	Lindsay Aschim	PAM2159	002-766	2.5	480	1200000	2/18/03	10	11	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml

# Lakeshore East Project - BORROW SOIL STOCKPILE SAMPLING

Offsite Fill

Using USEPA approved procedure SOP 214 *Workplan for Investigation and Removal of Radiologically Impacted Soil* (Revised September 30, 2002)

Excavation Area: Fill Soil Batch #1

Date Sampled: 2/20/03

Number of Samples  
Required Per SOP 214:  
10

PILE # : West Side of Site Est. Volume of Lift in Cubic Yards: 5000

Sample #	Total Radium in pCi/g	QC Sample Dup. Tot. Rad. in pCi/g	E lab uncertainty	S <sub>2</sub> Std. Dev. for the analyses of the duplicate sample	S <sub>dup</sub> Std. Dev. of the duplicate sampling & measurement
S2429 Fill Soil (1) #1	2.92				
S2430 Fill Soil (1) #2	1.99				
S2431 Fill Soil (1) #3	3.50				
S2432 Fill Soil (1) #4	4.48				
S2433 Fill Soil (1) #5	3.19				
S2434 Fill Soil (1) #6	2.43				
S2435 Fill Soil (1) #7	2.93				
S2436 Fill Soil (1) #8	3.42				
S2437 Fill Soil (1) #9	3.48				
S2438 Fill Soil (1) #10	3.09				
S2439 Fill Soil (1) QC		3.32	1.08	0.54	
Number of Samples (n)	10			S <sub>dup</sub> = sqrt (S <sub>1</sub> <sup>2</sup> + S <sub>2</sub> <sup>2</sup> ) =	
Average (Mean of the sample population) (X bar)	3.14				0.85

Average of samples is <7.1 pCi/g, Proceed with Confidence Level Check described in SOP-214, Paragraph 6.12

Standard Deviation of sample population (S<sub>1</sub>) 0.68

U<sub>α</sub> (True Mean) = (X bar) + (t \* (S<sub>1</sub>/sqrt(n))) 3.14

Where "t" is a statistic used for small sample tests of hypotheses (the Student Distribution), from SOP No. KMS-102, Attachment 10.6

Release Criteria

U<sub>α</sub> < Release Criteria?

*3.7 for fill*  
*SK*  
SAMPLES TESTED MEET 95% CONFIDENCE LEVEL -  
LIFT IS RADIOLOGICALLY ACCEPTABLE FOR USE AS  
ONSITE BACKFILL PER SOP-214

Check if QC Sample Dup. is within 3 Standard Deviations (3 S<sub>dup</sub>) of the mean of the sample population, per SOP 214, paragraph 12.1

3 x S<sub>dup</sub> = 2.55

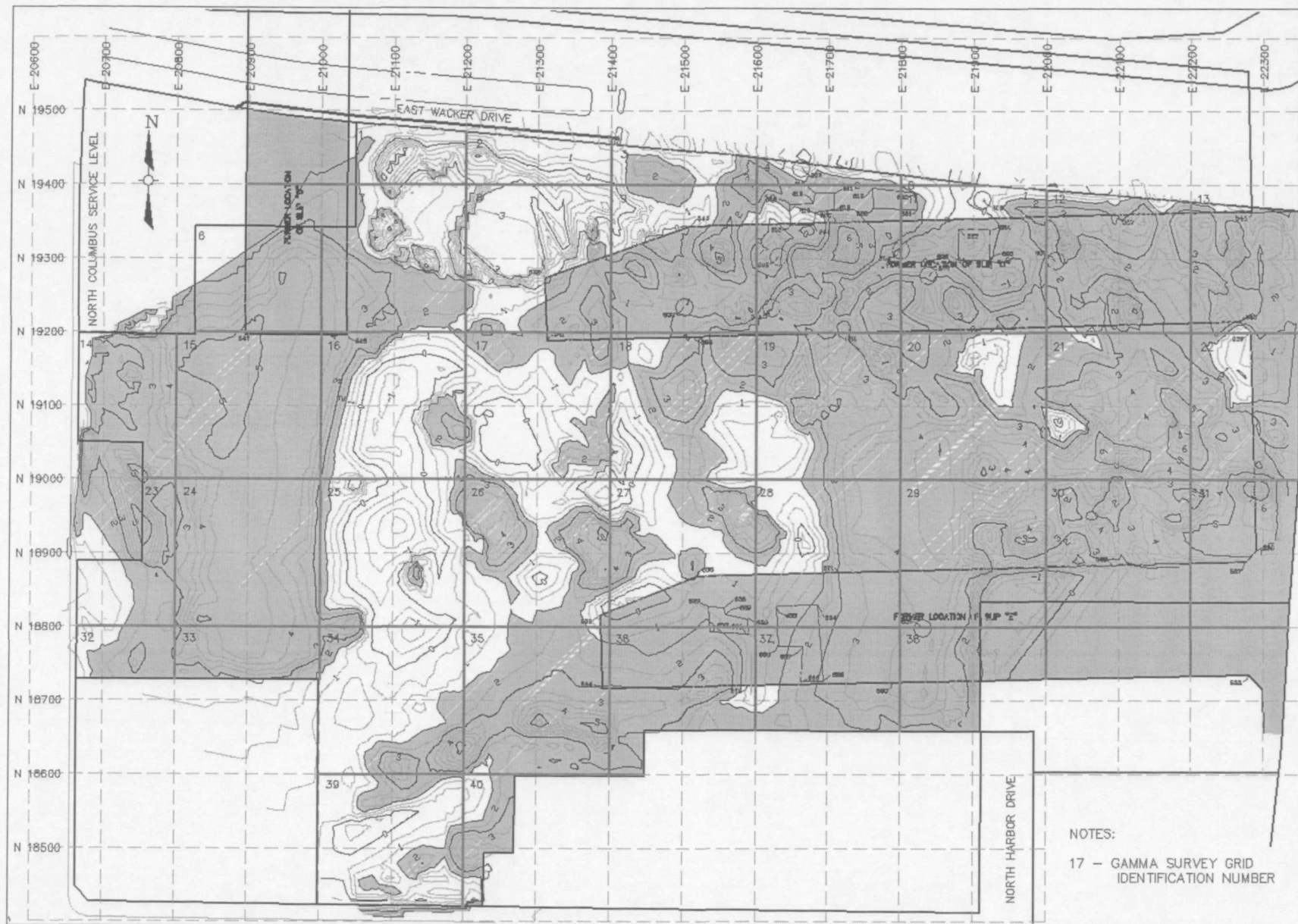
Mean + 3 S<sub>dup</sub> = 5.7 QC < (Mean + 3 S<sub>dup</sub>)? O.K.

Mean - 3 S<sub>dup</sub> = 0.8 QC > (Mean - 3 S<sub>dup</sub>)? O.K.

APPROVED: FIELD TEAM LEADER:

APPROVED: PROJECT MANAGER:

Name/date



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER

GRADING PHASE GAMMA SURVEY GRID  
NETWORK  
LAKE SHORE EAST GOLF COURSE  
221 N. COLUMBUS DRIVE  
CHICAGO, ILLINOIS



STS PROJECT NO.  
32193-XC  
STS PROJECT FILE  
CG-132193-2.dwg  
SCALE  
1"=120'  
FIGURE NO.  
1

DRAWN BY	PVP	DATE	12/02/02
CHECKED BY	RGB	DATE	12/02/02
APPROVED BY	SGT	DATE	12/02/02
GAUFLE X:\PROJECTS\132193\CG-132193-2.dwg 11/27/2002 12:			

February 20, 2003

Ms. Verneta Simon, On-Scene Coordinator  
 Mr. Fred Micke, On-Scene Coordinator  
 U.S. Environmental Protection Agency, Region 5  
 77 W. Jackson Boulevard, SE-5J  
 Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### **WORK COMPLETED FEBRUARY 10-14, 2003**

1. No soil excavation was conducted. The table below summarizes the quantity of radiologically-impacted material excavated during the project.

**Impacted Soil Loading Summary**

<b>Containers Loaded February 10-14, 2003</b>	<b>Cumulative Project Total</b>
0	176

2. Grading phase gamma surveys of the historical fill were performed in grids 7 and 20 with no elevated gamma readings observed. Lift survey activities will be completed in grid 7 following the remediation of the exclusion zone area identified last week. The table below summarizes the status of the lift surveys at the project site (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

<b>Status</b>	<b>Grid Locations</b>
Complete	1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 21, 22, 25, 26, 27, 28, 29, 30, 31, 34, 35, 37, 38, 39, 40
In Progress	7, 20, 36
Remaining	15, 18, 19, 24, 33

3. No area air monitoring was conducted. Results of the personal air monitoring conducted between February 10 and 14, 2003 will be provided with the next weekly report.
4. Personal air monitoring results for activities conducted between February 10 and 14, 2003 indicate no exceedances of the allowable limits (see attached).
5. The USEPA conducted a verification survey in grids 10 and 11 on Tuesday, February 11, 2003 and returned to the site on February 12, 2003 to complete the sample preparation after samples had thawed sufficiently to allow sieving. Notice of successful verification forms were signed by the USEPA for the area on February 13, 2003.

6. Excavation activities within the southern slip (Slip E) were monitored for the presence of radiologically-impacted material during the construction of an access ramp in the grid 31 area. No elevated gamma readings were observed during the survey activities.
7. On February 11, 2003 the USEPA issued a letter confirming that the remediation of known radiologically-impacted materials was complete in the southern slip (Slip E).
8. The importation of fill soil from off-site was initiated. The soil will be tested for radioactivity in lots of 10,000 cubic yards in accordance with Specification 02200 Part 2(E) of Appendix D in the Work Plan.

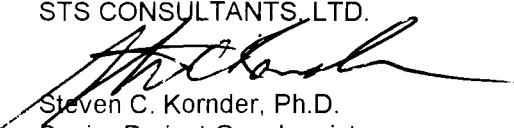
**PLANNED WORK FOR THE FEBRUARY 17 - 21, 2003**

1. No excavation activities are currently planned for the week. Thus, pursuant to USEPA approval, area air monitoring will not be conducted.
2. The grading phase (lift) surveys of historical fill will continue. Personal air monitoring will be conducted during the lift survey activities.
3. Test pits for locating utilities may be conducted at the project site. The areas will be surveyed for elevated gamma radiation as the explorations proceed.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

## Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

### North Monitor

Week #18 2/3/03-2/7/03

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/3/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/4/03	0	0.00E+00	0.00E+00	
2/5/03	0	0.00E+00	0.00E+00	
2/6/03	0	0.00E+00	0.00E+00	
2/7/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_s \cdot C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

#### Time Weighted Weekly

Effluent Concentration (North) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

### South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/3/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/4/03	0	0.00E+00	0.00E+00	
2/5/03	0	0.00E+00	0.00E+00	
2/6/03	0	0.00E+00	0.00E+00	
2/7/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_s \cdot C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

#### Time Weighted Weekly

Effluent Concentration (South) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

### East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/3/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/4/03	0	0.00E+00	0.00E+00	
2/5/03	0	0.00E+00	0.00E+00	
2/6/03	0	0.00E+00	0.00E+00	
2/7/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_s \cdot C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

#### Time Weighted Weekly

Effluent Concentration (East) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml



**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
2/3/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
2/4/03	0	0.00E+00	0.00E+00	
2/5/03	0	0.00E+00	0.00E+00	
2/6/03	0	0.00E+00	0.00E+00	
2/7/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 18

February 3, 2003 - February 7, 2003

February 6, 2000 - February 7, 2000																	
Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 18 February 3 - February 7, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
2/3/03	Tim O'Brien	PAM2142	002-875	2.5	474	1185000	2/4/03	16	10	0.20	4.26E-14 *
2/3/03	Lindsay Aschim	PAM2143	002-766	2.5	483	1207500	2/4/03	14	10	0.13	2.79E-14 *
2/4/03	Lindsay Aschim	PAM2144	002-875	2.5	345	862500	2/5/03	12	13	0.00	0.00E+00
2/4/03	Jerry Krane	PAM2145	002-574	2.5	492	1230000	2/5/03	13	13	0.00	0.00E+00
2/5/03	Jerry Krane	PAM2146	002-574	2.5	456	1140000	2/6/03	17	11	0.20	4.43E-14 *
2/5/03	Lindsay Aschim	PAM2147	002-766	2.5	455	1137500	2/6/03	14	11	0.10	2.22E-14 *
2/6/03	Tim O'Brien	PAM2148	002-766	2.5	449	1122500	2/7/03	13	13	0.00	0.00E+00
2/6/03	Jerry Krane	PAM2149	006-234	2.5	475	1187500	2/7/03	16	13	0.10	2.13E-14 *
2/7/03	Lindsay Aschim	PAM2150	002-766	2.5	478	1195000	2/10/03	13	12	0.03	7.04E-15 *
2/7/03	Jerry Krane	PAM2151	002-875	2.5	473	1182500	2/10/03	11	12	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 18 February 3 - February 7, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

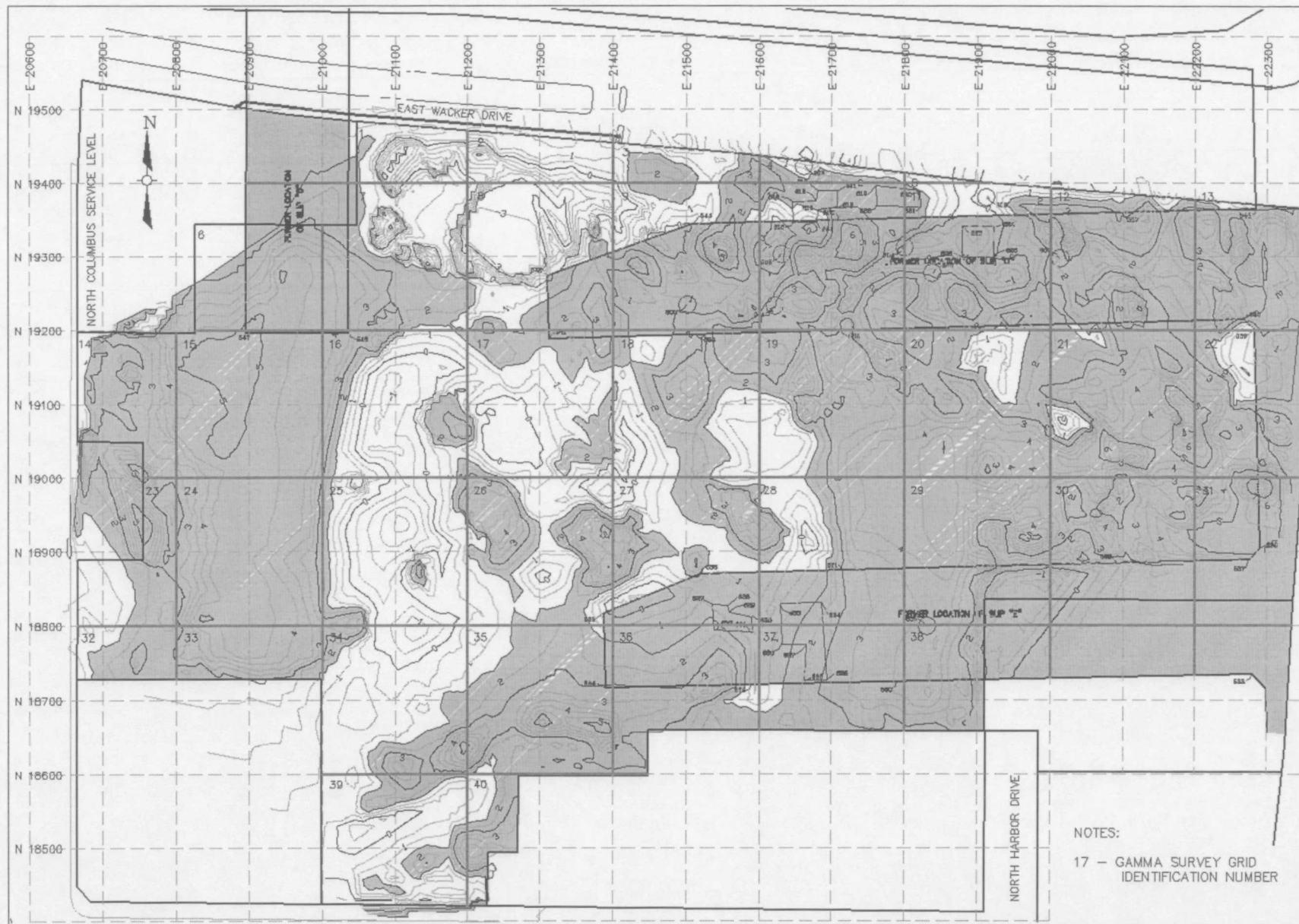
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
2/3/03	Tim O'Brien	PAM2142	002-875	2.5	474	1185000	2/7/03	11	13	0.00	0.00E+00	0.00%
2/3/03	Lindsay Aschim	PAM2143	002-766	2.5	483	1207500	2/7/03	13	13	0.00	0.00E+00	0.00%
2/5/03	Jerry Krane	PAM2148	002-574	2.5	458	1140000	2/10/03	10	12	0.00	0.00E+00	0.00%
2/5/03	Lindsay Aschim	PAM2147	002-786	2.5	455	1137500	2/10/03	9	12	0.00	0.00E+00	0.00%
2/6/03	Jerry Krane	PAM2149	008-234	2.5	475	1187500	2/11/03	11	10	0.03	7.08E-15	1.42%
2/7/03	Lindsay Aschim	PAM2150	002-786	2.5	478	1195000	2/12/03	10	10	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



NOTES:

17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER



STS Consulting Engineers Ltd.  
Consulting Engineers

STS PROJECT NO.  
32193-XC

STS PROJECT FILE  
06-132193-2.dwg

SCALE  
1"=120'

FIGURE NO.  
1

GRADING PHASE GAMMA SURVEY GRID  
NETWORK  
LAKE SHORE EAST GOLF COURSE  
221 N. COLUMBUS DRIVE  
CHICAGO, ILLINOIS

DRAWN BY	PVP	DATE	12/02/02
CHECKED BY	RGB	DATE	12/02/02
APPROVED BY	SGT	DATE	12/02/02
CADFILE	X:\PROJECTS\132193XC\CG-132193-2.dwg		

11/27/2002 12:



February 11, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### WORK COMPLETED FEBRUARY 3 - 7, 2003

1. No soil excavation was conducted. The table below summarizes the quantity of radiologically-impacted material excavated during the project.

**Impacted Soil Loading Summary**

Containers Loaded February 3 - 7, 2003	Cumulative Project Total
0	176

2. Grading phase gamma surveys of the historical fill were performed in grids 3, 4, 7, 8, 9, 10, 12 and 21. With the exception of grid 7, the survey activities were completed with no elevated gamma readings observed. In grid 7 a small area of elevated gamma readings was observed and designated as an exclusion zone. The table below summarizes the status of the lift surveys at the project site (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

Status	Grid Locations
Complete	1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 21, 22, 25, 26, 27, 28, 29, 30, 31, 34, 35, 37, 38, 39, 40
In Progress	7, 20, 36
Remaining	15, 18, 19, 24, 33

3. Area air monitoring was conducted during the excavation and handling of radiologically-impacted materials on January 27, 29 and 30, 2003. The area air monitoring performed during excavation activities and personal air monitoring conducted on field crews involved in gamma surveys indicate no exceedances of the allowable limits (see attached).
4. No area monitoring was conducted, but personal air monitoring was performed for site activities conducted between February 3 and 7, 2003. Results of the personal air monitoring will be provided in the next weekly report.

5. The USEPA conducted verification surveys in grids 10, 11 and 29 on Wednesday, February 5, 2003 and returned to the site on February 6, 2003 to complete the sample preparation after samples had thawed sufficiently to allow sieving. Analysis of the samples on Friday, February 7, 2003 indicated successful remediation in 3 of the 4 exclusion zones (10A, 10A-10B west and 29C). Notice of successful verification forms were signed by the USEPA for the three remediated areas on February 7, 2003.
6. Construction of an access ramp from Lakeshore Drive was initiated on Friday, February 7, 2003 in the grid 31 area of the southern slip. Excavation activities within the slip were monitored for the presence of radiologically-impacted material. No elevated gamma readings were observed during the survey activities.
7. The USEPA was notified in an STS letter dated February 4, 2002, that radiologically-impacted soil just slightly above the cleanup threshold extended beyond the property line in the southeast corner of grid 29 in the vicinity of North Harbor Drive.
8. In response to a verbal request from the USEPA, STS sent a letter dated February 7, 2003, to the USEPA providing information on apparent depth of the former slips based on boring information from the project site and nearby properties.

#### **PLANNED WORK FOR THE FEBRUARY 10 - 14, 2003**

1. No excavation activities are currently planned for the week. Thus, pursuant to USEPA approval, area air monitoring will not be necessary.
2. The grading phase (lift) surveys of historical fill will continue in grids 20 and 36. Personal air monitoring will be conducted during the lift survey activities.
3. Exclusion zone 10A-11B East will be sampled by the USEPA on Tuesday, February 11, 2003. A signed notice of successful verification form for the area will be requested from the USEPA following completion of the analysis of the USEPA verification samples.
4. Construction of the access ramp from Lakeshore Drive initiated on Friday, February 7, 2003 in the grid 31 area of the southern slip will continue. Excavation activities within the slip will be monitored for the presence of elevated gamma readings.
5. Test pits for locating utilities may be conducted at the project site. The areas will be surveyed for elevated gamma radiation as the explorations proceed.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

  
Steven C. Kornder, Ph.D.  
Senior Project Geochemist

#### **Attachments**

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

## North Monitor

Week #17 1/27/03-1/31/03

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/27/03	418	1.00E-15	4.18E-13	No contaminated loading today
1/28/03	0	0.00E+00	0.00E+00	
1/29/03	442	0.00E+00	0.00E+00	
1/30/03	398	5.34E-16	2.13E-13	No contaminated loading today
1/31/03	0	0.00E+00	0.00E+00	
1258		1.53E-15	6.31E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

Time Weighted Weekly

Effluent Concentration (North) = 5.01E-16 uCi/ml

Percentage of Release Limit of = 12.53%  
4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/27/03	420	5.66E-16	2.38E-13	No contaminated loading today
1/28/03	0	0.00E+00	0.00E+00	
1/29/03	439	7.46E-16	3.27E-13	
1/30/03	389	0.00E+00	0.00E+00	No contaminated loading today
1/31/03	0	0.00E+00	0.00E+00	
1248		1.31E-15	5.65E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

Time Weighted Weekly

Effluent Concentration (South) = 4.53E-16 uCi/ml

Percentage of Release Limit of = 11.32%  
4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/27/03	425	0.00E+00	0.00E+00	No contaminated loading today
1/28/03	0	0.00E+00	0.00E+00	
1/29/03	416	1.06E-15	4.41E-13	
1/30/03	398	0.00E+00	0.00E+00	No contaminated loading today
1/31/03	0	0.00E+00	0.00E+00	
1239		1.06E-15	4.41E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

Time Weighted Weekly

Effluent Concentration (East) = 3.56E-16 uCi/ml

Percentage of Release Limit of = 8.90%  
4E-15uCi/ml



**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration In uCi/ml	Concentration x Sample Min / Day	Comments
1/27/03	422	5.22E-16	2.20E-13	No contaminated loading today
1/28/03	0	0.00E+00	0.00E+00	
1/29/03	445	0.00E+00	0.00E+00	
1/30/03	383	0.00E+00	0.00E+00	
1/31/03	0	0.00E+00	0.00E+00	No contaminated loading today
1250		5.22E-16	2.20E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (West) = 1.76E-16 uCi/ml****Percentage of Release Limit of = 4.41%**

# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 17

January 27, 2003 - January 31, 2003

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
N2038	1/27/03	7:27am	2:25pm	418	58	2.40E+07	1/28/03	83	10	2.43333	3.65E-14	1/31/03	14	12	0.067	1.00E-15	25.01%
S2038	1/27/03	7:23am	2:23pm	420	51	2.12E+07	1/28/03	80	10	2.33333	3.96E-14	1/31/03	13	12	0.033	5.66E-16	14.15%
E2038	1/27/03	7:25am	2:30pm	425	55	2.32E+07	1/28/03	71	10	2.03333	3.16E-14	1/31/03	11	12	0	0.00E+00	0.00%
W2038	1/27/03	7:20am	2:22pm	422	55	2.30E+07	1/28/03	89	10	2.83333	4.13E-14	1/31/03	13	12	0.033	5.22E-16	13.06%
N2039	1/29/03	7:05am	2:27pm	442	55	2.41E+07	1/30/03	22	13	0.3	4.49E-15	2/3/03	11	11	0	0.00E+00	0.00%
S2039	1/29/03	7:01am	2:20pm	439	37	1.61E+07	1/30/03	33	13	0.66667	1.49E-14	2/3/03	12	11	0.033	7.46E-16	18.66%
E2039	1/29/03	7:24am	2:20pm	416	55	2.27E+07	1/30/03	27	13	0.46667	7.42E-15	2/3/03	13	11	0.067	1.08E-15	26.50%
W2039	1/29/03	7:00am	2:25pm	445	51	2.25E+07	1/30/03	28	13	0.43333	6.95E-15	2/3/03	11	11	0	0.00E+00	0.00%
N2040	1/30/03	7:10am	1:48pm	398	57	2.25E+07	1/31/03	106	12	3.13333	5.02E-14	2/4/03	11	10	0.033	5.34E-16	13.36%
S2040	1/30/03	7:25am	1:54pm	389	50	1.93E+07	1/31/03	84	12	2.4	4.49E-14	2/4/03	10	10	0	0.00E+00	0.00%
E2040	1/30/03	7:10am	1:48pm	398	55	2.17E+07	1/31/03	84	12	2.4	3.99E-14	2/4/03	10	10	0	0.00E+00	0.00%
W2040	1/30/03	7:28am	1:51pm	383	43	1.63E+07	1/31/03	79	12	2.23333	4.93E-14	2/4/03	9	10	0	0.00E+00	0.00%
Mon 1/27/03, Wed 1/29/03, and Thurs 1/30/03 were the only days during this week when thorium contaminated material was excavated and loaded. GAH																	

## Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 17 January 27 - January 31, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
1/27/03	Jerry Krane	PAM2130	002-574	2.5	484	1210000	1/28/03	17	10	0.23	4.87E-14 *
1/27/03	Lindsay Aschim	PAM2131	002-675	2.5	483	1207500	1/28/30	21	10	0.37	7.66E-14 *
1/27/03	Armando Ruiz	PAM2132	006-234	2.5	482	1205000	1/28/03	16	10	0.20	4.19E-14 *
1/28/03	Lindsay Aschim	PAM2133	006-234	2.5	486	1215000	1/29/03	38	11	0.90	1.87E-13 *
1/28/03	Jerry Krane	PAM2134	002-574	2.5	485	1212500	1/29/03	24	11	0.43	9.02E-14 *
1/29/03	Tim O'Brien	PAM2135	002-574	2.5	470	1175000	1/30/03	13	13	0.00	0.00E+00
1/29/03	Lindsay Aschim	PAM2136	002-675	2.5	180	400000	1/30/03	12	13	0.00	0.00E+00
1/29/03	Armando Ruiz	PAM2137	002-766	2.5	480	1200000	1/30/03	9	13	0.00	0.00E+00
1/30/03	Jerry Krane	PAM2138	006-234	2.5	487	1167500	1/31/03	14	12	0.07	1.44E-14 *
1/30/03	Armando Ruiz	PAM2139	002-574	2.5	497	1242500	1/31/03	12	12	0.00	0.00E+00
1/31/03	Lindsay Aschim	PAM2140	002-766	2.5	487	1167500	2/3/03	10	11	0.00	0.00E+00
1/31/03	Jerry Krane	PAM2141	002-574	2.5	492	1230000	2/3/03	10	11	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 17 January 27 - January 31, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

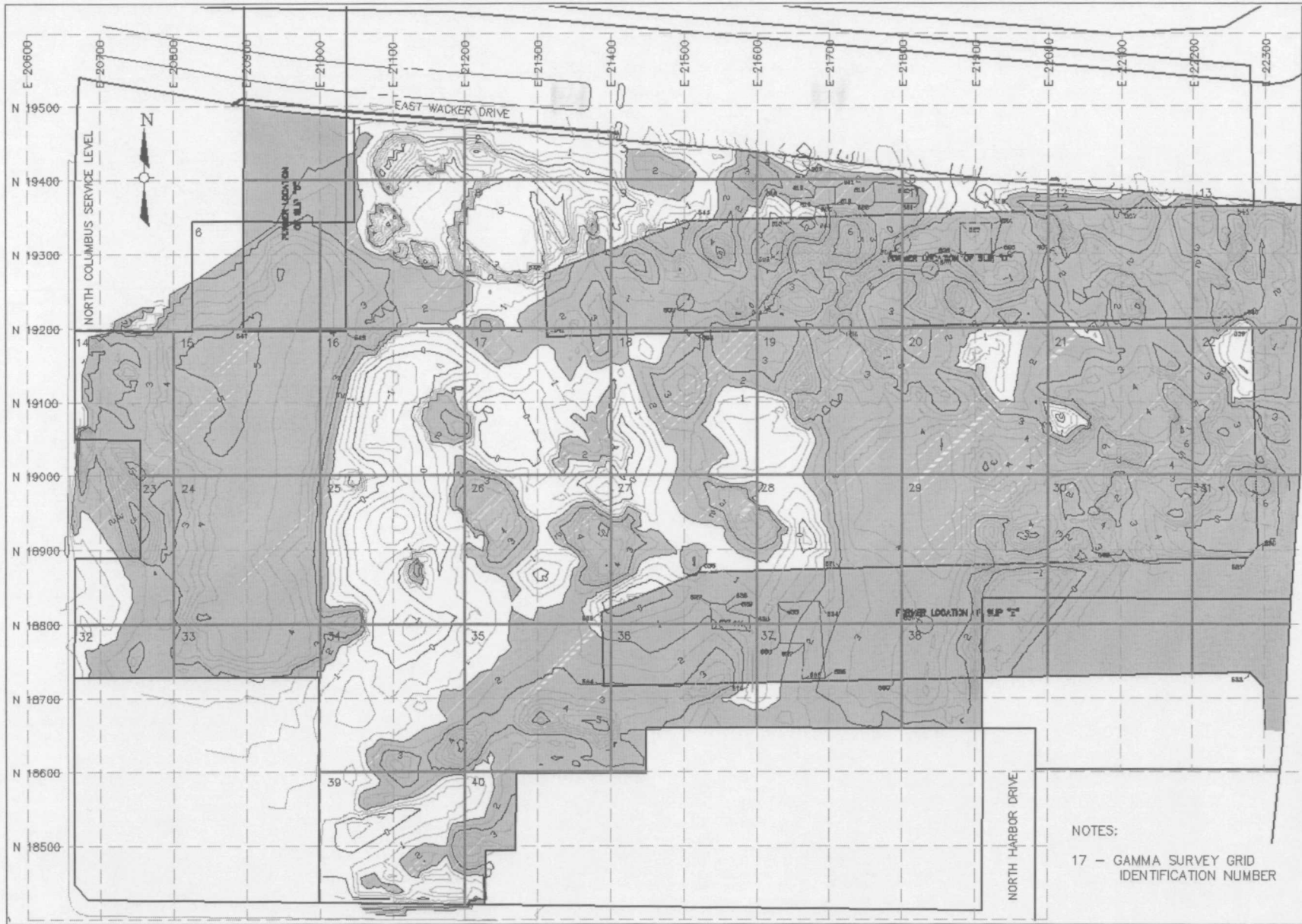
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
1/27/03	Jerry Krane	PAM2130	002-574	2.5	484	1210000	1/31/03	10	12	0.00	0.00E+00	0.00%
1/27/03	Lindsay Aschim	PAM2131	002-675	2.5	483	1207500	1/31/03	13	12	0.03	6.97E-15	1.39%
1/27/03	Armando Ruiz	PAM2132	006-234	2.5	482	1205000	1/31/03	12	12	0.00	0.00E+00	0.00%
1/28/03	Lindsay Aschim	PAM2133	006-234	2.5	486	1215000	2/3/03	9	11	0.00	0.00E+00	0.00%
1/28/03	Jerry Krane	PAM2134	002-574	2.5	485	1212500	2/3/03	11	11	0.00	0.00E+00	0.00%
1/30/03	Jerry Krane	PAM2138	006-234	2.5	467	1167500	2/4/03	10	10	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent


2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER

 <b>STS Consultants Ltd.</b> Consulting Engineers		DATE 12/02/02	
		DRAWN BY PVP	CHECKED BY RCB
		APPROVED BY SGT	DATE 12/02/02
		GAFFLE X:\PROJECTS\132193\XC\11/27/2002 12:	
GRADING PHASE GAMMA SURVEY GRID NETWORK LAKE SHORE EAST GOLF COURSE 221 N. COLUMBUS DRIVE CHICAGO, ILLINOIS			
STS PROJECT NO. 32193-XC STS PROJECT FILE 00-132193-2.dwg SCALE 1"=120' FIGURE NO. 1			



February 5, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### **WORK COMPLETED JANUARY 27 - 31, 2003**

1. Soil excavation was conducted in grids 10, 11 and 29 where radiologically-impacted material was discovered. The table below summarizes the quantity of radiologically-impacted material excavated as well as the cumulative total for the project.

**Impacted Soil Loading Summary**

<b>Containers Loaded January 27 – 31, 2003</b>	<b>Cumulative Project Total</b>
7	176

2. Grading phase gamma surveys of the historical fill were performed in grids 4, 10, and 21. Survey activities were completed in grid locations 11 and 12. No elevated gamma readings observed in grids 12 or 21. Small isolated areas of elevated gamma readings were measured during the lift surveys in grids 4 and 10 just north of the north slip (slip D). Exclusion zones were setup for these areas of elevated gamma readings. The table below summarizes the status of the lift surveys at the project site (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

<b>Status</b>	<b>Grid Locations</b>
Complete	1, 2, 5, 13, 16, 17, 22, 25, 26, 27, 28, 29, 30, 31, 34, 35, 37, 38, 39, 40
In Progress	4, 10, 11, 12, 21, 36
Remaining	3, 7, 8, 9, 18, 19, 20

3. Area air monitoring was conducted during the excavation or handling of radiologically-impacted materials on January 20, 22 and 24, 2003. The area air monitoring performed during excavation activities and personal air monitoring conducted on field crews involved in gamma surveys indicate no exceedances of the allowable limits (see attached).

4. Area and personal air monitoring were conducted during the excavation activities between January 27 and 31, 2003. Results of this air monitoring will be provided in the next weekly report.
5. Verification sign-offs were obtained from the USEPA on January 29 for impacted soil remediated in grid 36 during test pitting and for a section of southern slip in the southwest corner of grid 28 (E-F.5, 13-19).
6. STS received correspondence from the USEPA dated January 30 indicating that the January 7, 2003 correspondence from the USEPA could be disregarded. In response to discussions with the USEPA, STS will provide clarification to the USEPA regarding the sign-off requested for the borehole investigation area of the southern slip (grid 28).

#### **PLANNED WORK FOR THE FEBRUARY 3 - 7, 2003**

1. Excavation activities are planned to complete the remediation of the radiologically-impacted soil in the grids 4 and 10. Area air monitoring and personal air monitoring will be conducted during the excavation activities.
2. The grading phase (lift) surveys of historical fill will continue in grids 3, 4, 9, 10, and 21. Personal air monitoring will be conducted during the lift survey activities.
3. Test pits for locating utilities will be conducted at the project site. The areas will be surveyed for elevated gamma radiation as the explorations proceed.
4. The USEPA is scheduled to be at the site on Wednesday (February 5) to conduct verification surveys in grids 4, 10, 11 and 29.
5. In response to a request from USEPA, STS will compile and provide information on the depth of the fill in the former slips.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

#### **Attachments**

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**North Monitor**      **Week #16 1/20/03-1/24/03**      **(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/20/03	458	1.32E-15	6.05E-13	
1/21/03	0	0.00E+00	0.00E+00	No contaminated loading today
1/22/03	419	0.00E+00	0.00E+00	
1/23/03	0	0.00E+00	0.00E+00	No contaminated loading today
1/24/03	471	0.00E+00	0.00E+00	
1348		1.32E-15	6.05E-13	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

**Effluent Concentration (North) = 4.48E-16 uCi/ml**

Percentage of Release Limit of = 11.21%  
4E-15uCi/ml

**South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/20/03	470	0.00E+00	0.00E+00	
1/21/03	0	0.00E+00	0.00E+00	No contaminated loading today
1/22/03	398	1.11E-15	4.42E-13	
1/23/03	0	0.00E+00	0.00E+00	No contaminated loading today
1/24/03	461	0.00E+00	0.00E+00	
1329		1.11E-15	4.42E-13	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

**Effluent Concentration (South) = 3.32E-16 uCi/ml**

Percentage of Release Limit of = 8.31%  
4E-15uCi/ml

**East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/20/03	461	1.52E-15	7.01E-13	
1/21/03	0	0.00E+00	0.00E+00	No contaminated loading today
1/22/03	416	0.00E+00	0.00E+00	
1/23/03	0	0.00E+00	0.00E+00	No contaminated loading today
1/24/03	474	0.00E+00	0.00E+00	
1351		1.52E-15	7.01E-13	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

**Effluent Concentration (East) = 5.19E-16 uCi/ml**

Percentage of Release Limit of = 12.97%  
4E-15uCi/ml



# **West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/20/03	480	0.00E+00	0.00E+00	No contaminated loading today
1/21/03	0	0.00E+00	0.00E+00	
1/22/03	445	0.00E+00	0.00E+00	
1/23/03	0	0.00E+00	0.00E+00	No contaminated loading today
1/24/03	462	2.07E-15	9.56E-13	
	1387	2.07E-15	9.56E-13	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

Time Weighted Weekly	
Effluent Concentration (West) =	6.90E-16 uCi/ml
Percentage of Release Limit of =	17.24%

**Lakeshore East Project - 221 North Columbus Drive, Chicago, IL**

**January 20, 2003 - January 24, 2003**

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
N2035	1/20/03	7:23am	3:01pm	458	40	1.82E+07	1/21/03	55	12	1.43333	2.85E-14	1/24/03	13	11	0.067	1.32E-15	33.09%
S2035	1/20/03	7:15am	3:05pm	470	50	2.33E+07	1/21/03	28	12	0.53333	8.26E-15	1/24/03	11	11	0	0.00E+00	0.00%
E2035	1/20/03	7:22am	3:03pm	461	52	2.38E+07	1/21/03	51	12	1.3	1.97E-14	1/24/03	14	11	0.1	1.52E-15	37.94%
W2035	1/20/03	7:04am	3:04pm	480	57	2.71E+07	1/21/03	24	12	0.4	5.32E-15	1/24/03	10	11	0	0.00E+00	0.00%
N2036	1/22/03	7:29am	2:28pm	419	42	1.74E+07	1/23/03	46	12	1.13333	2.34E-14	1/27/03	12	12	0	0.00E+00	0.00%
S2036	1/22/03	7:52am	2:30pm	398	55	2.17E+07	1/23/03	31	12	0.63333	1.05E-14	1/27/03	14	12	0.067	1.11E-15	27.70%
E2036	1/22/03	7:30am	2:26pm	416	62	2.56E+07	1/23/03	40	12	0.93333	1.32E-14	1/27/03	12	12	0	0.00E+00	0.00%
W2036	1/22/03	7:25am	2:50pm	445	55	2.43E+07	1/23/03	50	12	1.26667	1.88E-14	1/27/03	11	12	0	0.00E+00	0.00%
N2037	1/24/03	7:17am	3:08pm	471	47	2.19E+07	1/27/03	20	12	0.26667	4.38E-15	1/29/03	10	11	0	0.00E+00	0.00%
S2037	1/24/03	7:22am	3:03pm	461	42	1.92E+07	1/27/03	19	12	0.23333	4.38E-15	1/29/03	11	11	0	0.00E+00	0.00%
E2037	1/24/03	7:07am	3:01pm	474	55	2.58E+07	1/27/03	24	12	0.4	5.58E-15	1/29/03	11	11	0	0.00E+00	0.00%
W2037	1/24/03	7:23am	3:05pm	462	38	1.74E+07	1/27/03	18	12	0.2	4.14E-15	1/29/03	14	11	0.1	2.07E-15	51.80%

Mon 1/20/03, Wed 1/22/03, and Friday 1/24/03 were the only days during this week when thorium contaminated material was excavated and loaded. GAH

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 16 January 20 - January 24, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
1/20/03	Lindsay Aschim	PAM2118	006-234	2.5	469	1172500	1/21/03	11	12	0.00	0.00E+00
1/20/03	Jerry Krane	PAM2119	002-675	2.5	491	1227500	1/21/03	13	12	0.03	6.85E-15 *
1/20/03	Armando Ruiz	PAM2120	002-574	2.5	500	1250000	1/21/03	8	12	0.00	0.00E+00
1/21/03	Tim O'Brien	PAM2121	002-574	2.5	485	1212500	1/22/03	18	13	0.17	3.47E-14 *
1/21/03	Jerry Krane	PAM2122	006-234	2.5	492	1230000	1/22/03	19	13	0.20	4.10E-14 *
1/22/03	Tim O'Brien	PAM2123	002-574	2.5	515	1287500	1/23/03	28	12	0.53	1.05E-13 *
1/22/03	Lindsay Aschim	PAM2124	006-234	2.5	514	1285000	1/23/03	24	12	0.40	7.86E-14 *
1/22/03	Armando Ruiz	PAM2125	002-675	2.5	495	1237500	1/23/03	19	12	0.23	4.76E-14 *
1/23/03	Tim O'Brien	PAM2126	006-234	2.5	470	1175000	1/24/03	14	11	0.10	2.15E-14 *
1/23/03	Jerry Krane	PAM2127	002-675	2.5	485	1212500	1/24/03	11	11	0.00	0.00E+00
1/24/03	Glenn Huber	PAM2128	006-234	2.5	384	960000	1/27/03	12	12	0.00	0.00E+00
1/24/03	Armando Ruiz	PAM2129	002-574	2.5	491	1227500	1/27/03	11	12	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 16 January 20 - January 24, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

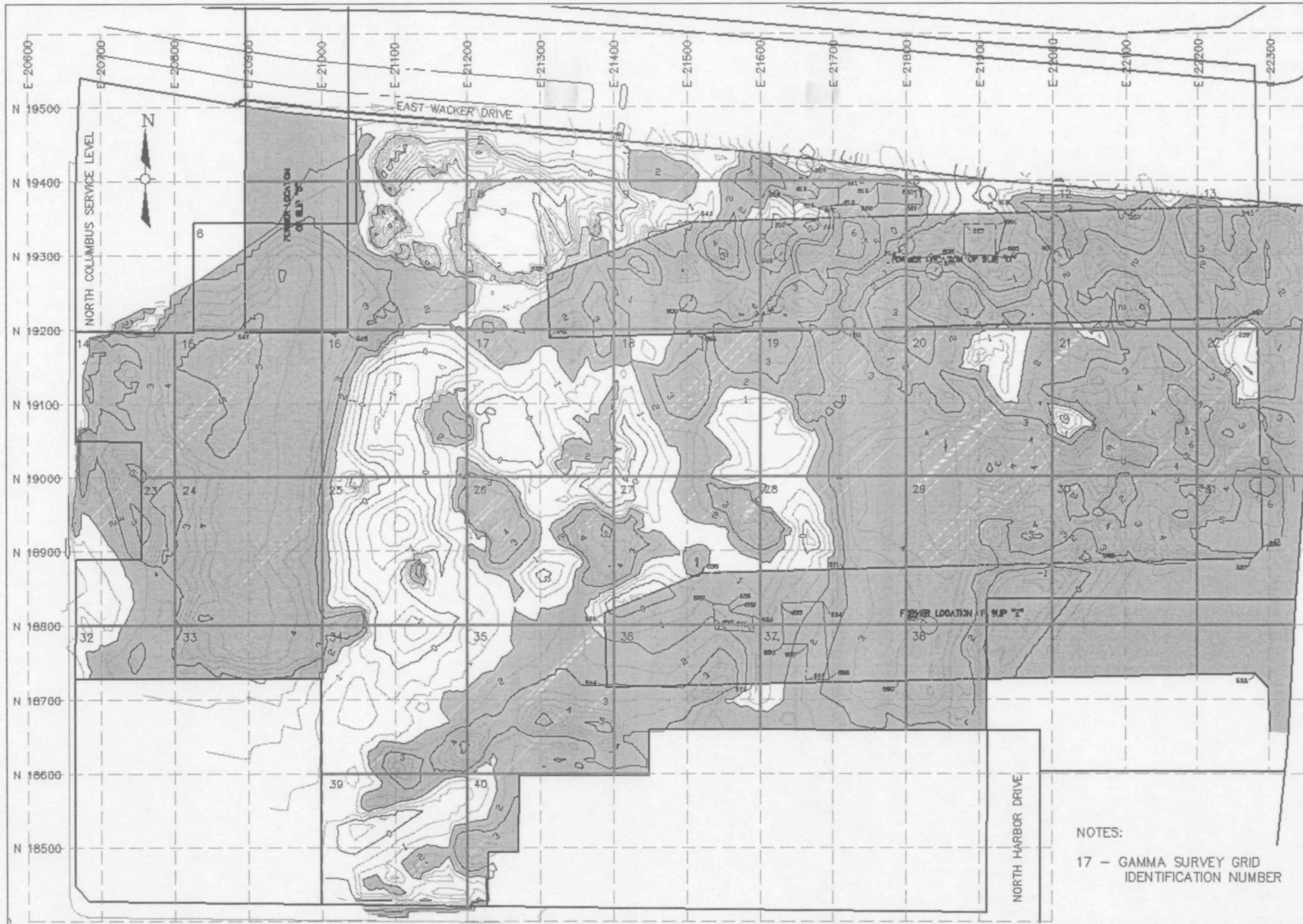
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
1/20/03	Jerry Krane	PAM2119	002-675	2.5	491	1227500	1/24/03	11	11	0.00	0.00E+00	0.00%
1/21/03	Tim O'Brien	PAM2121	002-574	2.5	485	1212500	1/27/03	10	12	0.00	0.00E+00	0.00%
1/21/03	Jerry Krane	PAM2122	006-234	2.5	492	1230000	1/27/03	12	12	0.00	0.00E+00	0.00%
1/22/03	Tim O'Brien	PAM2123	002-574	2.5	515	1287500	1/27/03	14	12	0.07	1.31E-14	2.61%
1/22/03	Lindsay Aschim	PAM2124	006-234	2.5	514	1285000	1/27/03	9	12	0.00	0.00E+00	0.00%
1/22/03	Armando Ruiz	PAM2125	002-675	2.5	495	1237500	1/27/03	11	12	0.00	0.00E+00	0.00%
1/23/03	Tim O'Brien	PAM2126	006-234	2.5	470	1175000	1/28/03	9	10	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER

GRADING PHASE GAMMA SURVEY GRID  
NETWORK  
LAKE SHORE EAST GOLF COURSE  
221 N. COLUMBUS DRIVE  
CHICAGO, ILLINOIS



STS Consultants Ltd.  
Consulting Engineers

STS PROJECT NO.  
32193-XC

STS PROJECT FILE  
09-132193-2.dwg

SCALE  
1"=120'

FIGURE NO.  
1

DRAWN BY	PVP	DATE	12/02/02
CHECKED BY	RCB	DATE	12/02/02
APPROVED BY	SGT	DATE	12/02/02
CAUTION	X:\PROJECTS\132193\		
	09-132193-2.dwg		

11/27/2002 12:



January 28, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### **WORK COMPLETED JANUARY 20 - 24, 2003**

1. Soil excavation was conducted in grids 29 and 36 (southern slip area) where radiologically-impacted material was discovered during trenching and lift survey activities, respectively. This excavation completed the remediation activities in grid 36. However, additional excavation is needed in the grid 29 area. The table below summarizes the quantity of radiologically-impacted material excavated as well as the cumulative total for the project.

**Impacted Soil Loading Summary**

<b>Containers Loaded January 20 -24, 2003</b>	<b>Cumulative Project Total</b>
7	169

2. Grading phase gamma surveys of the historical fill were performed in grids 10, 11, 12, 13, 21 and 22. The survey activities were completed in grid locations 13 and 22 with no elevated gamma readings observed. Elevated gamma readings were measured during the lift surveys in grids 10 and 11 just north of the slip. Exclusion zones were setup for these areas of elevated gamma readings. The table below summarizes the status of the lift surveys at the project site (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

<b>Status</b>	<b>Grid Locations</b>
Complete	1, 2, 5, 13, 16, 17, 22, 25, 26, 27, 28, 29, 30, 31, 34, 35, 37, 38, 39, 40
In Progress	10, 11, 12, 21, 36
Remaining	3, 4, 7, 8, 9, 18, 19, 20,

3. Area air monitoring was not performed between January 13 and 17, 2003, since there was no excavation or handling of radiologically-impacted materials. Personal air monitoring conducted on the field crews involved in gamma surveys activities indicates no exceedances of the allowable limits (see attached).
4. Area air monitoring was conducted during the excavation activities between January 20 and 24, 2003. Results of the area air monitoring and personal air monitoring will be provided in the next weekly report.

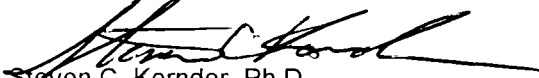
**PLANNED WORK FOR THE JANUARY 27 - 31, 2003**

1. Excavation activities are planned to complete the remediation of the radiologically-impacted soil in the southeast corner of grid 29. Following completion in grid 29, excavation/remediation activities will shift to the exclusion zones located in the northern portions of grids 10 and 11. Area air monitoring and personal air monitoring will be conducted during the excavation activities.
2. The grading phase (lift) surveys of historical fill will continue in grids 10, 11, 12 and 22. Personal air monitoring will be conducted during the lift survey activities.
3. Test pits for locating utilities and/or proposed caissons will be conducted at the project site. The areas will be surveyed for elevated gamma radiation as the explorations proceed.
4. The USEPA will be requested to response on STS's January 10, 2003 letter seeking concurrence that no further exploration or remediation is necessary below the watertable in the southern slip (southwest corner of grid 28).
5. The USEPA will conduct verification surveys in grid 36 and may be requested to perform verification activities in other locations, such as grid 29, if remediation work is completed.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

## North Monitor

Week #15 1/13/03-1/17/03

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/13/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/14/03	0	0.00E+00	0.00E+00	
1/15/03	0	0.00E+00	0.00E+00	
1/16/03	0	0.00E+00	0.00E+00	
1/17/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/13/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/14/03	0	0.00E+00	0.00E+00	
1/15/03	0	0.00E+00	0.00E+00	
1/16/03	0	0.00E+00	0.00E+00	
1/17/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (South) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/13/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/14/03	0	0.00E+00	0.00E+00	
1/15/03	0	0.00E+00	0.00E+00	
1/16/03	0	0.00E+00	0.00E+00	
1/17/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (East) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml



**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/13/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/14/03	0	0.00E+00	0.00E+00	
1/15/03	0	0.00E+00	0.00E+00	
1/16/03	0	0.00E+00	0.00E+00	
1/17/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

**Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)***Lakeshore East Project - 221 North Columbus Drive, Chicago, IL***Week 15****January 13, 2003 - January 17, 2003**

January 16, 2000 - January 17, 2000																	
Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	

## Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 15 January 13 - January 17, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
1/13/03	Tim O'Brien	PAM2108	002-675	2.5	472	1180000	1/14/03	12	12	0.00	0.00E+00
1/13/03	Lindsay Aschim	PAM2109	002-766	2.5	470	1175000	1/14/03	9	12	0.00	0.00E+00
1/14/03	Tim O'Brien	PAM2110	006-234	2.5	477	1192500	1/15/03	14	11	0.10	2.12E-14*
1/14/03	Lindsay Aschim	PAM2111	002-766	2.5	476	1190000	1/15/03	12	11	0.03	7.07E-15*
1/15/03	Jerry Krane	PAM2112	002-766	2.5	467	1167500	1/16/03	14	9	0.17	3.80E-14*
1/15/03	Tim O'Brien	PAM2113	006-234	2.5	477	1192500	1/16/03	9	9	0.00	0.00E+00
1/16/03	Lindsay Aschim	PAM2114	002-574	2.5	480	1200000	1/17/03	16	12	0.13	2.80E-14*
1/16/03	Jerry Krane	PAM2115	006-234	2.5	490	1225000	1/17/03	12	12	0.00	0.00E+00
1/17/03	Tim O'Brien	PAM2116	006-234	2.5	469	1172500	1/20/03	10	10	0.00	0.00E+00
1/17/03	Jerry Krane	PAM2117	002-766	2.5	473	1182500	1/20/03	10	10	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 15 January 13 - January 17, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

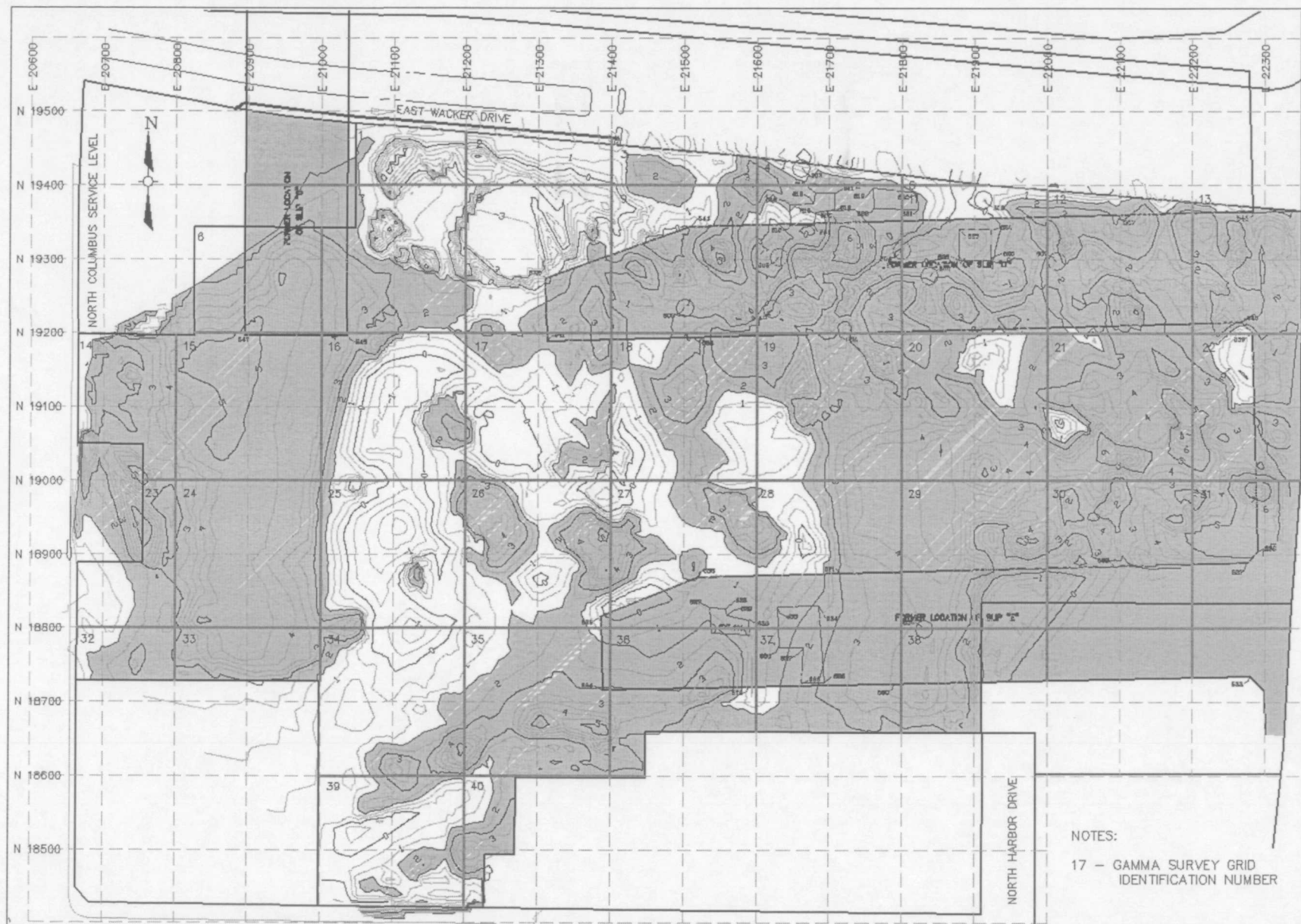
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
1/14/03	Tim O'Brien	PAM2110	008-234	2.5	477	1192500	1/20/03	10	10	0.00	0.00E+00	0.00%
1/14/03	Lindsay Aschim	PAM2111	002-766	2.5	476	1190000	1/20/03	11	10	0.03	7.07E-15	1.41%
1/15/03	Jerry Krane	PAM2112	008-234	2.5	477	1192500	1/20/03	8	10	0.00	0.00E+00	0.00%
1/16/03	Lindsay Aschim	PAM2114	002-574	2.5	480	1200000	1/21/03	10	12	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent


2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 =  $5E-13$  uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC =  $1.5E-13$  uCi/ml



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER

 STS Consulting Engineers Ltd. Consulting Engineers	GRADING PHASE GAMMA SURVEY GRID NETWORK LAKE SHORE EAST GOLF COURSE 221 N. COLUMBUS DRIVE CHICAGO, ILLINOIS			DATE	12/02/02
	DRAWN BY	PVP	CHECKED BY	RGB	DATE
	APPROVED BY	SGT	DATE	12/02/02	DATE
	GAUFLE	X:\PROJECTS\132193\XC\	GG-132193-2.dwg	11/27/2002 12:	

STS PROJECT NO.  
 32193-XC  
 STS PROJECT FILE  
 GG-132193-2.dwg  
 SCALE  
 1"=120'  
 FIGURE NO.  
 1



January 20, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### WORK COMPLETED JANUARY 13 - 17, 2003

1. No excavation of radiologically-impacted soil occurred at the site.
2. Grading phase gamma surveys of the historical fill were completed in grid locations 30 and 31. No elevated gamma readings were measured during the lift activities in grids 30 or 31. Work in grid 36 will be complete following the remediation of one remaining isolated area of radiologically-impacted soil. The table below summarizes the status of the lift surveys of historical fill materials at the project site (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

Status	Grid Locations
Complete	1, 2, 5, 16, 17, 25, 26, 27, 28, 29, 30, 31, 34, 35, 37, 38, 39, 40
In Progress	22,36
Remaining	3, 4, 7, 8, 9, 10, 11, 12, 13, 18, 19, 20, 21

3. During a trenching activity an isolated area of elevated gamma readings was discovered in the southern slip (eastern edge of the southeast corner of grid 29). The area was setup as an exclusion zone and designated for remediation/excavation.
4. No area air monitoring occurred between January 6 and 10, 2003. Personal air monitoring conducted between January 6 and 10 on the field crews involved in gamma surveys activities indicates no exceedances of the allowable limits (see attached).
5. Area air monitoring was not performed between January 13 and 17, 2003, since there was no excavation or handling of radiologically-impacted materials. The results of the personal air monitoring conducted during the lift survey activities will be provided in the next weekly report.
6. STS discussed with USEPA our response dated January 10, 2003 to the USEPA correspondence of January 7, 2003 regarding the investigation for radiologically impacted soil below the water table. Based on our interpretation that no exceedances were detected, the USEPA has been requested to conduct a verification survey of the section of the southern slip (southwest corner of grid 28) where that investigation was conducted.

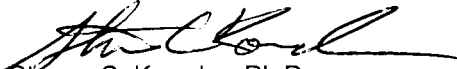
**PLANNED WORK FOR THE JANUARY 20 - 24, 2003**

1. Excavation activities are planned to complete the remediation of the radiologically-impacted soil encountered in grid 36 during the lift survey and in the southern slip in the southeast corner of grid 29. Area air monitoring will be conducted during the excavation activities. The USEPA will be requested to conduct verification surveys following the remediation of the impacted areas in grids 29 and 36.
2. The grading phase (lift) surveys of historical fill will continue at the site. Work will initially take place in grid 22 and then progress west to grids 21 and 20 (Figure 1). Personal air monitoring will be conducted during the lift survey activities.
3. The USEPA will be asked to respond to STS's January 10, 2003 letter requesting concurrence that no further exploration or remediation is necessary below the watertable in the southern slip, specifically the southwest corner of grid 28 (Figure 1).

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

**Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report**

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**North Monitor****Week #14 1/6/03-1/10/03****(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/6/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/7/03	0	0.00E+00	0.00E+00	
1/8/03	0	0.00E+00	0.00E+00	
1/9/03	0	0.00E+00	0.00E+00	
1/10/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (North) =**

#DIV/0! uCi/ml

Percentage of Release Limit of =

#DIV/0!

4E-15uCi/ml

**South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/6/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/7/03	0	0.00E+00	0.00E+00	
1/8/03	0	0.00E+00	0.00E+00	
1/9/03	0	0.00E+00	0.00E+00	
1/10/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (South) =**

#DIV/0! uCi/ml

Percentage of Release Limit of =

#DIV/0!

4E-15uCi/ml

**East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/6/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/7/03	0	0.00E+00	0.00E+00	
1/8/03	0	0.00E+00	0.00E+00	
1/9/03	0	0.00E+00	0.00E+00	
1/10/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (East) =**

#DIV/0! uCi/ml

Percentage of Release Limit of =

#DIV/0!

4E-15uCi/ml



**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
1/6/03	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
1/7/03	0	0.00E+00	0.00E+00	
1/8/03	0	0.00E+00	0.00E+00	
1/9/03	0	0.00E+00	0.00E+00	
1/10/03	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

**Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)***Lakeshore East Project - 221 North Columbus Drive, Chicago, IL***Week 14****January 6, 2003 - January 10, 2003**

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration In uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration In uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 14 January 6 - January 10, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
1/6/03	Jerry Krane	PAM2099	002-675	2.5	483	1207500	1/7/03	11	13	0.00	0.00E+00
1/7/03	Jerry Krane	PAM2100	002-675	2.5	467	1167500	1/8/03	22	11	0.37	7.93E-14*
1/7/03	Lindsay Aschim	PAM2101	002-574	2.5	470	1175000	1/8/03	20	11	0.30	6.44E-14*
1/8/03	Lindsay Aschim	PAM2102	002-675	2.5	458	1145000	1/9/03	26	12	0.47	1.03E-13*
1/8/03	Jerry Krane	PAM2103	002-766	2.5	467	1167500	1/9/03	33	12	0.70	1.51E-13*
1/9/03	Tim O'Brien	PAM2104	002-574	2.5	462	1155000	1/10/03	18	9	0.30	6.55E-14*
1/9/03	Jerry Krane	PAM2105	006-234	2.5	463	1157500	1/10/03	24	9	0.50	1.09E-13*
1/10/03	Jerry Krane	PAM2106	002-766	2.5	471	1177500	1/13/03	12	10	0.07	1.43E-14*
1/10/03	Lindsay Aschim	PAM2107	002-675	2.5	469	1172500	1/13/03	9	10	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.

## Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 14 January 6 - January 10, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

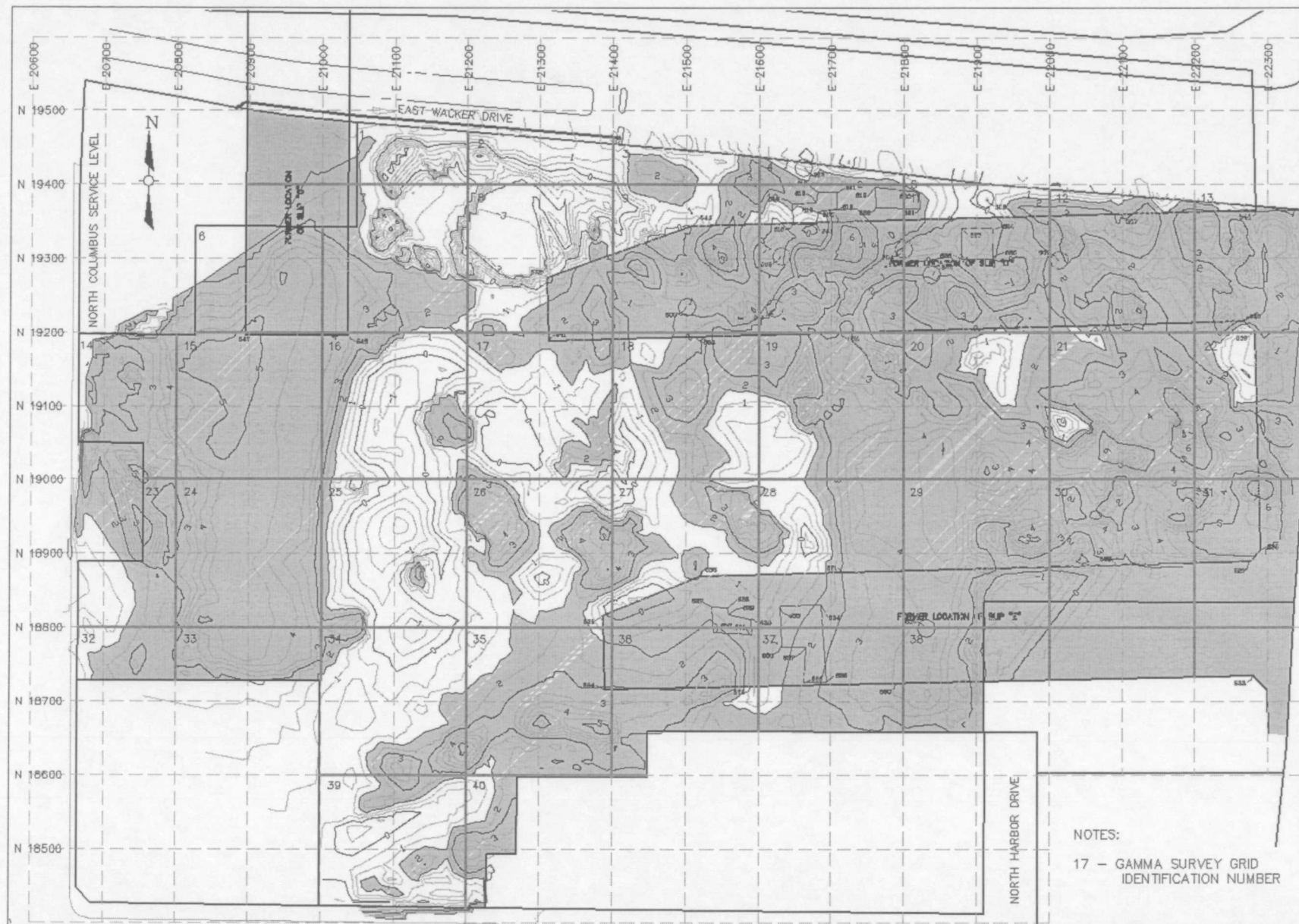
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
1/7/03	Jerry Krane	PAM2100	002-875	2.5	467	1167500	1/13/03	9	10	0.00	0.00E+00	0.00%
1/7/03	Lindsay Aschim	PAM2101	002-574	2.5	470	1175000	1/13/03	10	10	0.00	0.00E+00	0.00%
1/8/03	Lindsay Aschim	PAM2102	002-875	2.5	458	1145000	1/13/03	10	10	0.00	0.00E+00	0.00%
1/8/03	Jerry Krane	PAM2103	002-766	2.5	467	1167500	1/13/03	7	10	0.00	0.00E+00	0.00%
1/9/03	Tim O'Brien	PAM2104	002-574	2.5	462	1155000	1/14/03	9	12	0.00	0.00E+00	0.00%
1/9/03	Jerry Krane	PAM2105	008-234	2.5	463	1157500	1/14/03	11	12	0.00	0.00E+00	0.00%
1/10/03	Jerry Krane	PAM2108	002-766	2.5	471	1177500	1/15/03	10	11	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



NOTES:

17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER



STS Consulting Engineers Ltd.  
Consulting Engineers

STS PROJECT NO.

32193-XC

STS PROJECT FILE

09-132193-2.dwg

SCALE

1"=120'

FIGURE NO.

1

GRADING PHASE GAMMA SURVEY GRID  
NETWORK  
LAKE SHORE EAST GOLF COURSE  
221 N. COLUMBUS DRIVE  
CHICAGO, ILLINOIS

DRAWN BY	PVP	DATE	12/02/02
CHECKED BY	RGB	DATE	12/02/02
APPROVED BY	SGT	DATE	12/02/02
CADFILE	X:\PROJECTS\132193XC\09-132193-2.dwg		

11/27/2002 12:



January 16, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### **WORK COMPLETED JANUARY 6 - 11, 2003**

1. No excavation of radiologically-impacted soil occurred at the site.
2. Grading phase gamma surveys of the historical fill were completed in grid locations 28 and 29. Survey activities are currently taking place in grid 30. Work in grid 36 will be complete following the remediation of one remaining isolated area of radiologically-impacted soil. The table below summarizes the status of the lift surveys of historical fill materials at the project site (refer to Figure 1 for the grid locations).

**Grading Phase Survey Status  
Lakeshore East**

Status	Grid Locations
Complete	1, 2, 5, 16, 17, 25, 26, 27, 28, 29, 34, 35, 37, 38, 39, 40
In Progress	30, 36
Remaining	3, 4, 7, 8, 9, 10, 11, 12, 13, 18, 19, 20, 21, 22, 31

3. Test pits were excavated by People's Energy to locate utilities in grid 9. The excavations were surveyed for elevated gamma radiation as the excavations proceeded. No elevated gamma readings were measured during the test pit operations.
4. Area air monitoring was conducted on January 2 and 3, 2003, when activities involved the excavation of impacted soil. Personal air monitoring was conducted between December 30 and January 3 on the field crews involved in the excavation and gamma surveys activities. The results of this air monitoring indicate no exceedances of the allowable limits (see attached)
5. Area air monitoring was not conducted between January 6 and 10, 2003, since there was no excavation of radiologically-impacted material. However, personal air monitoring was conducted during test pit and lift survey activities. The results of the personal air monitoring conducted during these activities will be provided in the next weekly report.

6. A response was received from the USEPA on January 7, 2003, regarding the casing survey (STS, November 6, 2002) conducted below the watertable on the borings installed in the southern slip (refer to Figure 1 - southwest corner of grid 28). STS issued a response letter (January 10, 2003) to the USEPA with comments on the assumptions/calculations included in the USEPA document. The STS response requested that the USEPA provide written concurrence that no further exploration or remediation is required at this location.

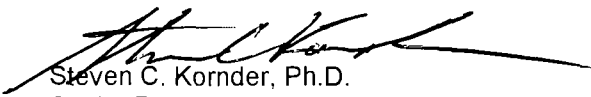
**PLANNED WORK FOR THE JANUARY 13 - 17, 2003**

1. No excavation of radiologically-impacted materials is planned.
2. The grading phase (lift) surveys of historical fill will continue at the site. Personal air monitoring will be conducted during the lift survey activities.
3. Test pits for locating existing utilities and proposed caissons may be conducted at the project site. The areas will be surveyed for elevated gamma radiation as explorations proceed.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

## North Monitor

Week #13 12/30/02-1/3/03

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/30/02	0	0.00E+00	0.00E+00	
12/31/02	0	0.00E+00	0.00E+00	
1/1/03	0	0.00E+00	0.00E+00	
1/2/03	371	5.73E-16	2.13E-13	
1/3/03	473	0.00E+00	0.00E+00	
	844	5.73E-16	2.13E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = 2.52E-16 uCi/ml

Percentage of Release Limit of = 6.30%  
4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/30/02	0	0.00E+00	0.00E+00	
12/31/02	0	0.00E+00	0.00E+00	
1/1/03	0	0.00E+00	0.00E+00	
1/2/03	371	0.00E+00	0.00E+00	
1/3/03	424	0.00E+00	0.00E+00	
	795	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (South) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%  
4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/30/02	0	0.00E+00	0.00E+00	
12/31/02	0	0.00E+00	0.00E+00	
1/1/03	0	0.00E+00	0.00E+00	
1/2/03	370	1.19E-15	4.40E-13	
1/3/03	424	1.10E-15	4.86E-13	
	794	2.29E-15	9.07E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (East) = 1.14E-15 uCi/ml

Percentage of Release Limit of = 28.55%  
4E-15uCi/ml



# **West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/30/02	0	0.00E+00	0.00E+00	
12/31/02	0	0.00E+00	0.00E+00	
1/1/03	0	0.00E+00	0.00E+00	
1/2/03	365	0.00E+00	0.00E+00	
1/3/03	466	0.00E+00	0.00E+00	
	831	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

## **Time Weighted Weekly**

**Effluent Concentration (West) = 0.00E+00 uCi/ml**

**Percentage of Release Limit of = 0.00%**

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**December 30, 2002 - January 3, 2003**

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
N2033	1/2/03	8:27am	2:38pm	371	57	2.10E+07	1/3/02	29	13	0.53333	9.17E-15	1/7/03	14	13	0.033	5.73E-18	14.33%
S2033	1/2/03	8:25am	2:36pm	371	44	1.62E+07	1/3/02	20	13	0.23333	5.20E-15	1/7/03	11	13	0	0.00E+00	0.00%
E2033	1/2/03	8:28am	2:38pm	370	55	2.02E+07	1/3/02	26	13	0.43333	7.75E-15	1/7/03	15	13	0.067	1.19E-15	29.79%
W2033	1/2/03	8:31am	2:38pm	365	50	1.81E+07	1/3/02	21	13	0.26667	5.32E-15	1/7/03	12	13	0	0.00E+00	0.00%
N2034	1/3/03	7:10am	3:03pm	473	45	2.11E+07	1/8/03	15	12	0.1	1.71E-15	1/8/03	10	11	0	0.00E+00	0.00%
S2034	1/3/03	8:01am	3:05pm	424	54	2.27E+07	1/8/03	18	12	0.13333	2.12E-15	1/8/03	11	11	0	0.00E+00	0.00%
E2034	1/3/03	7:53am	2:57pm	424	52	2.19E+07	1/8/03	14	12	0.06667	1.10E-15	1/8/03	13	11	0.067	1.10E-15	27.50%
W2034	1/3/03	7:15am	3:01pm	468	57	2.63E+07	1/8/03	17	12	0.16667	2.28E-15	1/8/03	9	11	0	0.00E+00	0.00%

Thursday 1/2/03 and Friday 1/3/03 were the only days during this week when thorium contaminated material was excavated and loaded GAH

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 13 December 30 - January 3, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
12/30/02	Tim O'Brien	PAM2092	002-574	2.5	470	1175000	1/2/03	9	11	0.00	0.00E+00
12/30/02	Jerry Krane	PAM2093	008-234	2.5	468	1170000	1/2/03	10	11	0.00	0.00E+00
No PAM's on 12/31/02 - New Year's Eve											
No PAM's on 1/1/03 - New Year's Day											
1/2/03	Ray Booker	PAM2094	008-234	2.5	462	1155000	1/3/02	11	13	0.00	0.00E+00
1/2/03	Jerry Krane	PAM2095	002-574	2.5	475	1187500	1/3/02	15	13	0.07	1.42E-14
1/3/03	Ray Booker	PAM2096	002-574	2.5	405	1012500	1/8/03	10	12	0.00	0.00E+00
1/3/03	Lindsay Aschim	PAM2097	008-234	2.5	355	887500	1/8/03	12	12	0.00	0.00E+00
1/3/03	Jerry Krane	PAM2098	008-234	2.5	121	302500	1/8/03	11	12	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 13 December 30 - January 3, 2003

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

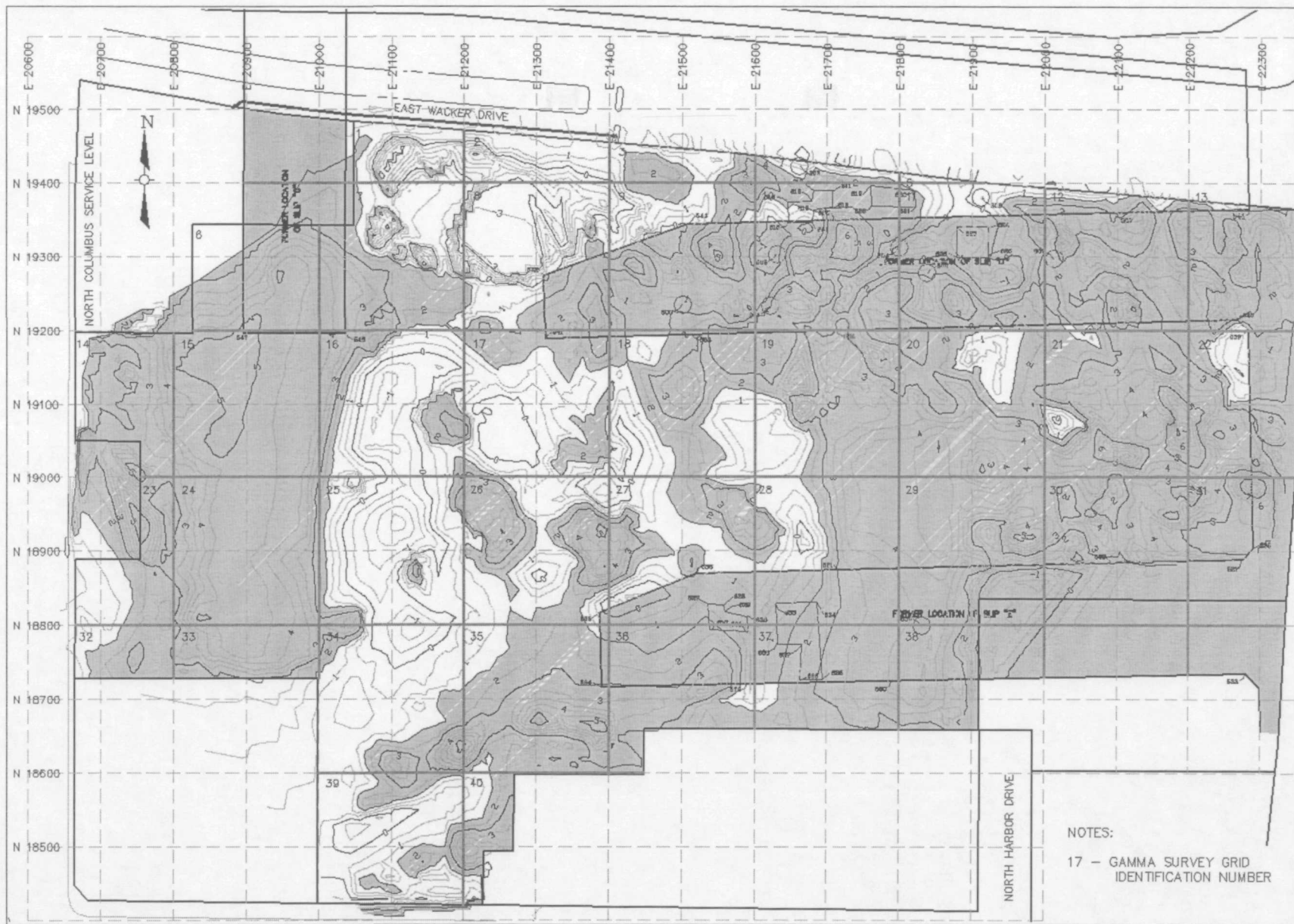
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
1/2/03	Jerry Krane	PAM2095	002-574	2.5	475	1187500	1/7/03	11	13	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent


2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER

 STS Consultants Ltd. Consulting Engineers	GRADING PHASE GAMMA SURVEY GRID NETWORK		DATE	12/02/02
	LAKE SHORE EAST GOLF COURSE 221 N. COLUMBUS DRIVE CHICAGO, ILLINOIS		CHECKED BY	PVP
			APPROVED BY	RGB
			DATE	12/02/02
		DATE	12/02/02	SGT
		GAUFLE X:\PROJECTS\132193\132193-2.dwg 11/27/2002 12:		

STS PROJECT NO.  
 32193-XC  
 STS PROJECT FILE  
 00-132193-2.dwg  
 SCALE  
 1"=120'  
 FIGURE NO.  
 1



January 9, 2003

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project  
No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing an update of the work completed and the planned activities. Due to the shortened holiday work schedules this report includes activities completed during the weeks of December 23 and 30, 2002.

#### **WORK COMPLETED DECEMBER 23 – 27, 2002 AND DECEMBER 30, 2002 – JANUARY 3, 2003**

1. Site grubbing activities were completed on December 24. No investigation activities were conducted at the site on December 25, 2002 or January 1, 2003
2. Grading phase lift survey activities are currently in progress in grid locations 28 and 36. Surveys of the historical fill in grids locations 16, 17, 25, 26, 27, 34, 35, 37, 38, 39 and 40 are complete (refer to Figure 1).
3. Several small isolated areas with slightly elevated gamma readings were remediated on December 19, 2002. The USEPA completed verification surveys and signed notification of successful verification survey forms on December 23, 2002 (refer to verification forms for areas 26C-D, 28A, and 35B-36A).
4. Test pits were excavated to locate existing utilities and proposed caissons. The excavations were surveyed for elevated gamma radiation as the excavations proceeded. Elevated gamma readings were measured at several of the proposed caisson excavations (R-16, R-20, 6-1, S-9 and S-11). These areas, which were roped-off as exclusion zones, are located within the southern slip in grid location 36 (refer to Figure 1).
5. On January 2 and 3 excavation of soil was conducted in the southern slip area in the proposed caisson/test pit areas where radiologically impacted material was discovered (grid location 36). The Table below summarizes the quantity of radiologically-impacted material excavated as well as the cumulative total for the project.

**Impacted Soil Loading Summary**

<b>Containers Loaded January 2 and 3, 2003</b>	<b>Cumulative Project Total</b>
5-1/4	162

6. Excavation area air monitoring was conducted on December 19, 2002 during the remediation of the radiologically impacted soils in grids 26, 28, 35 and 36. Air monitoring results for the December 19, 2002 area air monitoring and the personal monitoring for December 16-20 and December 23-27, 2002 indicate no exceedances of the allowable limits (see attached).

7. Area air monitoring was conducted on January 2 and 3, 2003, when activities involved the excavation of impacted soil. Personal air monitoring was conducted each day on a single individual within the field crews involved in gamma surveys for test pits and grading. The results of the air monitoring conducted between December 30, 2002 and January 3, 2003 will be provided in the next weekly report.

**PLANNED WORK FOR THE JANUARY 6 - 10, 2003**

1. Test pits for locating existing utilities and proposed caissons will be conducted at the project site. These areas will be surveyed for elevated gamma radiation as explorations proceed.
2. The grading phase (lift) surveys of historical fill will continue at the site.
3. The USEPA was requested to provide comments regarding the casing survey (STS, 11/6/02) conducted below the watertable in the boring E-25 area of the southern slip.
4. Excavation activities may take place to complete the remediation of the radiologically-impacted soil encountered during the investigation of the proposed caisson locations. Area air monitoring will be conducted during excavation activities and personal air monitoring will continue to be performed at the grading and test pit investigations.
5. The USEPA will be requested to conduct verification surveys when the remediation of the areas containing radiologically-impacted material is complete.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

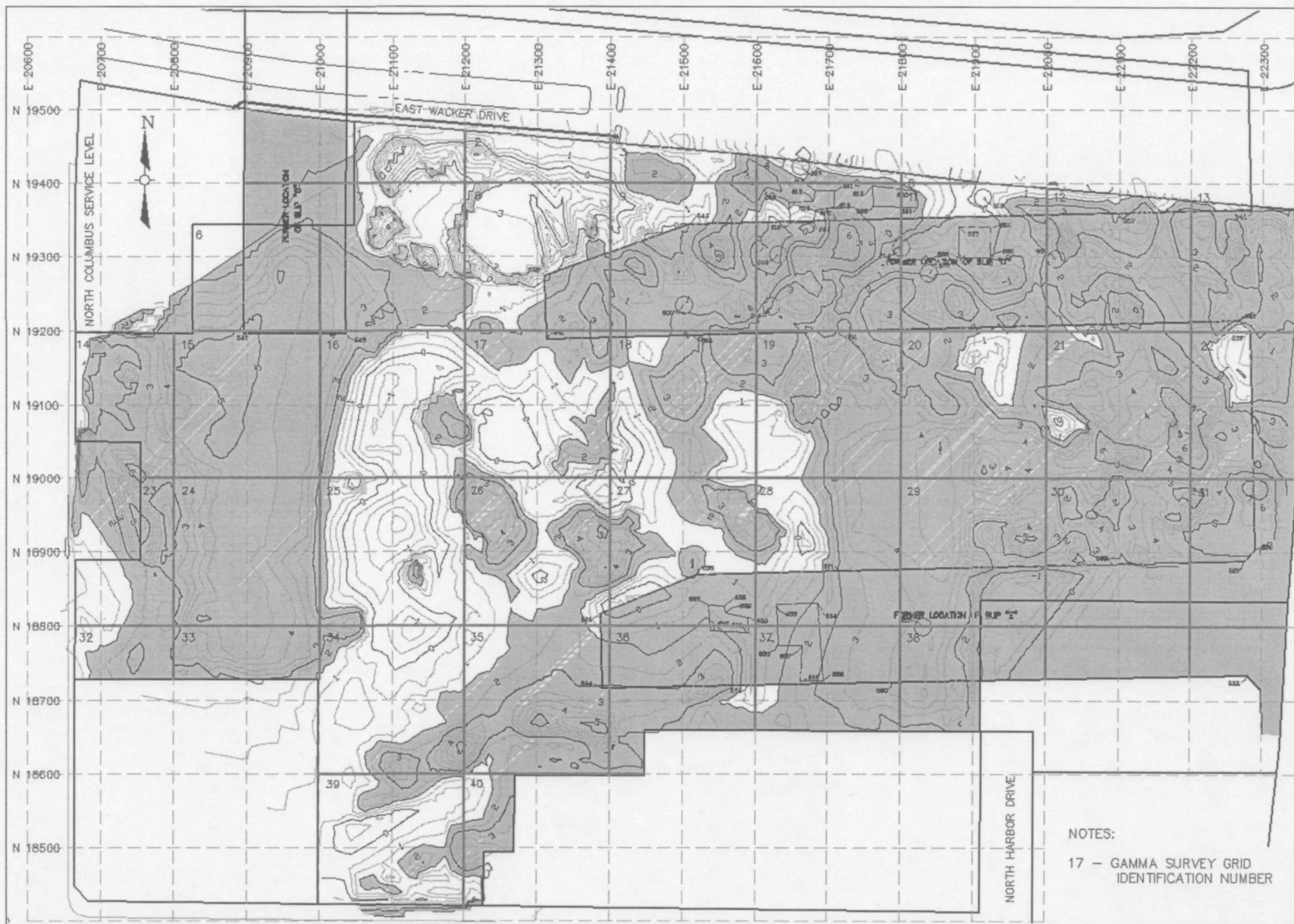
STS CONSULTANTS, LTD.

*Steven C. Kornder* (fn)


Steven C. Kornder, Ph.D.  
Senior Project Geochemist

**Attachments**

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER

 STS Consulting Engineers Ltd Consulting Engineers STS PROJECT NO. 32193-XC STS PROJECT FILE CG-132193-2.dwg SCALE 1"=120' FIGURE NO. 1	GRADING PHASE GAMMA SURVEY GRID NETWORK LAKE SHORE EAST GOLF COURSE 221 N. COLUMBUS DRIVE CHICAGO, ILLINOIS			
	DRAWN BY	PVP	DATE	12/02/02
	CHECKED BY	RCB	DATE	12/02/02
	APPROVED BY	SGT	DATE	12/02/02
CADFILE		X:\PROJECTS\132193\CG-		

11/27/2002 12:



# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

## North Monitor

Week #11 12/16/02-12/20/02

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/16/02	0	0.00E+00	0.00E+00	Area Air Monitoring on 12/19/02 Only
12/17/02	0	0.00E+00	0.00E+00	
12/18/02	0	0.00E+00	0.00E+00	
12/19/02	449	0.00E+00	0.00E+00	
12/20/02	0	0.00E+00	0.00E+00	
	449	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

$$\sum T_s$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%  
4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/16/02	0	0.00E+00	0.00E+00	Area Air Monitoring on 12/19/02 Only
12/17/02	0	0.00E+00	0.00E+00	
12/18/02	0	0.00E+00	0.00E+00	
12/19/02	447	6.16E-16	2.75E-13	
12/20/02	0	0.00E+00	0.00E+00	
	447	6.16E-16	2.75E-13	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

$$\sum T_s$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (South) = 6.16E-16 uCi/ml

Percentage of Release Limit of = 15.40%  
4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/16/02	0	0.00E+00	0.00E+00	Area Air Monitoring on 12/19/02 Only
12/17/02	0	0.00E+00	0.00E+00	
12/18/02	0	0.00E+00	0.00E+00	
12/19/02	442	0.00E+00	0.00E+00	
12/20/02	0	0.00E+00	0.00E+00	
	442	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

$$\sum T_s$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (East) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%  
4E-15uCi/ml

# **West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/16/02	0	0.00E+00	0.00E+00	Area Air Monitoring on 12/19/02 Only
12/17/02	0	0.00E+00	0.00E+00	
12/18/02	0	0.00E+00	0.00E+00	
12/19/02	459	0.00E+00	0.00E+00	
12/20/02	0	0.00E+00	0.00E+00	
	459	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_{s,i} C_i}{\sum T_s}$$

$$\sum T_s$$

Eq A.9 NUREG 1400

## **Time Weighted Weekly**

**Effluent Concentration (West) = 0.00E+00 uCi/ml**

Percentage of Release Limit of = 0.00%

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**December 16, 2002 - December 20, 2002**

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
N2032	12/19/02	7:35am	3:04pm	449	42	1.87E+07	12/20/02	161	11	5	9.64E-14	12/24/02	11	12	0	0.00E+00	0.00%
S2032	12/19/02	7:36am	3:03pm	447	44	1.95E+07	12/20/02	145	11	4.46667	8.26E-14	12/24/02	13	12	0.033	6.16E-16	15.41%
E2032	12/19/02	7:37am	2:59pm	442	40	1.75E+07	12/20/02	186	11	5.83333	1.20E-13	12/24/02	10	12	0	0.00E+00	0.00%
W2032	12/19/02	7:27am	3:06pm	459	47	2.14E+07	12/20/02	179	11	5.6	9.44E-14	12/24/02	11	12	0	0.00E+00	0.00%
<p>Thursday, December 19, 2002 was the only day during this week that thorium contaminated soil was handled and packaged. Area air monitoring will resume, if additional contamination above the cleanup threshold is encountered and excavated.</p>																	

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 11 December 16 - December 20, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
12/16/02	Lindsay Aschim	PAM2078	002-675	2.5	476	1190000	12/17/02	8	9	0.00	0.00E+00
12/16/02	Jerry Krane	PAM2079	002-574	2.5	472	1180000	12/17/02	9	9	0.00	0.00E+00
12/17/02	Lindsay Aschim	PAM2080	002-574	2.5	469	1172500	12/18/02	11	11	0.00	0.00E+00
12/17/02	Jerry Krane	PAM2081	002-766	2.5	505	1262500	12/18/02	10	11	0.00	0.00E+00
No PAM's on 12/18/02. Work stopped due to heavy rain											
12/19/02	Odell Morgan	PAM2082	002-574	2.5	405	1012500	12/20/02	17	11	0.20	4.98E-14 *
12/19/02	Jerry Krane	PAM2083	006-234	2.5	515	1287500	12/20/02	9	11	0.00	0.00E+00
12/20/02	Jerry Krane	PAM2084	006-234	2.5	521	1302500	12/23/02	11	13	0.00	0.00E+00
12/20/02	Lindsay Aschim	PAM2085	002-574	2.5	517	1292500	12/23/02	13	13	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 11 December 16 - December 20, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
12/19/02	Odell Morgan	PAM2082	002-574	2.5	405	1012500	12/23/02	11	13	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml

## Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

### North Monitor

Week #12 12/23/02-12/27/02

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/23/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/24/02	0	0.00E+00	0.00E+00	
12/25/02	0	0.00E+00	0.00E+00	
12/26/02	0	0.00E+00	0.00E+00	
12/27/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

### South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/23/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/24/02	0	0.00E+00	0.00E+00	
12/25/02	0	0.00E+00	0.00E+00	
12/26/02	0	0.00E+00	0.00E+00	
12/27/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (South) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

### East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/23/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/24/02	0	0.00E+00	0.00E+00	
12/25/02	0	0.00E+00	0.00E+00	
12/26/02	0	0.00E+00	0.00E+00	
12/27/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (East) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/23/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/24/02	0	0.00E+00	0.00E+00	
12/25/02	0	0.00E+00	0.00E+00	
12/26/02	0	0.00E+00	0.00E+00	
12/27/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 12

December 23, 2002 - December 27, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	



# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 12 December 23 - December 27, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
12/23/02	Joel Ahrweiler	PAM2086	008-234	2.5	484	1210000	12/24/02	21	12	0.30	6.26E-14 *
12/23/02	Jerry Krane	PAM2087	002-574	2.5	475	1187500	12/24/02	26	12	0.47	9.92E-14 *
No PAM's on 12/24/02 - Christmas Eve											
No PAM's on 12/25/02 - Christmas Day											
12/26/02	Jerry Krane	PAM2088	002-574	2.5	470	1175000	12/27/02	21	12	0.30	6.44E-14 *
12/26/02	Lindsay Aschim	PAM2089	006-234	2.5	480	1200000	12/27/02	15	12	0.10	2.10E-14 *
12/27/02	Lindsay Aschim	PAM2090	002-574	2.5	456	1140000	12/30/02	9	11	0.00	0.00E+00
12/27/02	Jerry Krane	PAM2091	006-234	2.5	458	1145000	12/30/02	11	11	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 12 December 23 - December 27, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
12/23/02	Joel Ahweiler	PAM2086	006-234	2.5	484	1210000	12/27/02	13	12	0.03	6.95E-15	1.39%
12/23/02	Jerry Krane	PAM2087	002-574	2.5	475	1187500	12/27/02	10	12	0.00	0.00E+00	0.00%
12/26/02	Jerry Krane	PAM2088	002-574	2.5	470	1175000	12/30/02	11	11	0.00	0.00E+00	0.00%
12/26/02	Lindsay Aschim	PAM2089	006-234	2.5	480	1200000	12/30/02	12	11	0.03	7.01E-15	1.40%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml

**STS Consultants, Ltd.**

750 Corporate Woods Parkway  
Vernon Hills, IL 60061  
Phone: (847) 279-2500  
FAX: (847) 279-2510

**FACSIMILE TRANSMISSION****Date:** December 23, 2002**To:** Verneta Simon/Fred Micke USEPA Fax #: 312-353-9176

Kara Hughes Lakeshore East, LLC Fax #: 312-642-2773

Sean Bezark Altheimer &amp; Gray Fax #: 312-715-4800

Barbara Magel Karaganis, White &amp; Magel Ltd. Fax #: 312-836-9083

Mark Krippel Kerr-McGee Chemical LLC Fax #: 630-231-3990

**Pages being transmitted, incl. Cover:** 4**CC:** **Fax No.:****From:** Steve Kornder **Phone:** 847-279-2500**Re:** Lakeshore East, 221 N. Columbus Dr., Chicago, IL☐ Urgent ☐ For Signature ☐ For Review ☐ Please Comment/Reply ☐ As Requested ☐ Original to Follow**Message:**

Attached is the weekly report for the Lakeshore East site at 221 N. Columbus Drive in Chicago, IL.  
Please contact me with any questions.

**IMPORTANT:** This facsimile is intended only for the of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this facsimile is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return this facsimile to us at the above address via the United States Postal Service. Thank you.

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**STS CONSULTANTS**

STS Consultants, Ltd.  
750 Corporate Woods Parkway  
Vernon Hills, Illinois 60061-3153

voice 847-279-2500  
fax 847-279-2520  
web [www.stsconsultants.com](http://www.stsconsultants.com)

December 23, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois – STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### **WORK COMPLETED FROM DECEMBER 16-20, 2002**

1. Site-wide grubbing activities are underway. Grading phase lift survey activities are currently in progress in grid locations 17, 26 and 35 – 38. Surveys of the historical fill in grids locations 16, 25, 34, 39 and 40 are complete (refer to Figure 1).
2. Several small isolated areas of slightly elevated gamma readings were measured in grids 26, 28, 35 and 36. These areas were remediated on December 19, 2002. A total of eight "super-sacks" were filled during the excavation process.
3. Excavation area air monitoring was conducted on December 19, 2002 during the remediation of the radiologically impacted soils of grids 26, 28, 35 and 36. The results of this air monitoring will be provided in the next weekly report. Personal air monitoring continues to be conducted on a single individual within each field crew involved in the gamma surveys for test pits and grading. Air monitoring results for the previous week (see attached) indicate no exceedances of the allowable limits were measured in air monitoring conducted between December 9 and 13, 2002.
4. Test pits were excavated to locate existing utilities and proposed caissons. The excavations were surveyed for elevated gamma radiation as the excavations proceeded. No elevated gamma readings were measured during these operations.

#### **PLANNED WORK FOR THE DECEMBER 23-27, 2002**

1. Grubbing and site-wide grading will continue with the exception of December 25. The grubbing and grading activities will be surveyed for potential radiological impacts in accordance with the work plan.
2. The USEPA will visit the site to conduct verification surveys in the remediated areas of grids 26, 28, 35 and 36.
3. Test pits for locating existing utilities and proposed caissons will be conducted at the project site. These areas will be surveyed for elevated gamma radiation as explorations proceed.
4. The USEPA was requested to provide comments regarding the casing survey (STS, 11/6/02) conducted below the watertable in the boring E-25 area of the southern slip.


U.S. Environmental Protection Agency  
STS Project No. 1-32193-XC  
December 23, 2002  
Page 2

5. No excavation activities are currently planned. Personal air monitoring will be conducted on a single individual in each field crew involved in the gamma surveying operations. Area air monitoring will only be reinstated to temporary monitor the remediation associated with newly discovered areas of radiologically-impacted material.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

  
Steven C. Komder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

**Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report**

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**North Monitor****Week #10 12/09/02-12/13/02****(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/9/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/10/02	0	0.00E+00	0.00E+00	
12/11/02	0	0.00E+00	0.00E+00	
12/12/02	0	0.00E+00	0.00E+00	
12/13/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

 $\sum T_i$ 

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (North) = #DIV/0! uCi/ml**Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml**South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/9/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/10/02	0	0.00E+00	0.00E+00	
12/11/02	0	0.00E+00	0.00E+00	
12/12/02	0	0.00E+00	0.00E+00	
12/13/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

 $\sum T_i$ 

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (South) = #DIV/0! uCi/ml**Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml**East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/9/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/10/02	0	0.00E+00	0.00E+00	
12/11/02	0	0.00E+00	0.00E+00	
12/12/02	0	0.00E+00	0.00E+00	
12/13/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

 $\sum T_i$ 

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (East) = #DIV/0! uCi/ml**Percentage of Release Limit of = #DIV/0!  
4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/9/02	0	0.00E+00	0.00E+00	No Area Air Monitoring This Week
12/10/02	0	0.00E+00	0.00E+00	
12/11/02	0	0.00E+00	0.00E+00	
12/12/02	0	0.00E+00	0.00E+00	
12/13/02	0	0.00E+00	0.00E+00	
	0	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum I_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = #DIV/0! uCi/ml

Percentage of Release Limit of = #DIV/0!

# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 10

December 9, 2002 - December 13, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Area Air Monitoring This Week																	
PAM's ONLY																	



# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 10 December 9 - December 13, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
12/9/02	Jerry Krane	PAM2068	002-675	2.5	460	1150000	12/10/02	8	10	0.00	0.00E+00
12/9/02	Lindsay Aschim	PAM2069	002-766	2.5	447	1117500	12/10/02	15	10	0.17	3.76E-14
12/10/02	Lindsay Aschim	PAM2070	002-766	2.5	467	1167500	12/11/02	9	10	0.00	0.00E+00
12/10/02	Tim O'Brien	PAM2071	002-574	2.5	462	1155000	12/11/02	10	10	0.00	0.00E+00
12/11/02	Tim O'Brien	PAM2072	002-574	2.5	473	1182500	12/12/02	30	10	0.67	1.42E-13
12/11/02	Jerry Krane	PAM2073	002-766	2.5	474	1185000	12/12/02	33	10	0.77	1.63E-13
12/12/02	Jerry Krane	PAM2074	002-766	2.5	459	1147500	12/13/02	13	13	0.00	0.00E+00
12/12/02	Lindsay Aschim	PAM2075	002-574	2.5	459	1147500	12/13/02	54	13	1.37	3.01E-13
12/13/02	Jerry Krane	PAM2076	002-574	2.5	483	1157500	12/16/02	10	10	0.00	0.00E+00
12/13/02	Lindsay Aschim	PAM2077	002-766	2.5	459	1147500	12/16/02	8	10	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 10 December 9 - December 13, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
12/9/02	Lindsay Aschim	PAM2069	002-766	2.5	460	1150000	12/13/02	10	13	0.00	0.00E+00	0.00%
12/11/02	Tim O'Brien	PAM2072	002-574	2.5	473	1182500	12/16/02	9	10	0.00	0.00E+00	0.00%
12/11/02	Jerry Krane	PAM2073	002-766	2.5	474	1185000	12/16/02	9	10	0.00	0.00E+00	0.00%
12/12/02	Lindsay Aschim	PAM2075	002-574	2.5	459	1147500	12/17/02	8	9	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



STS CONSULTANTS

STS Consultants, Ltd. voice 847-279-2500  
 150 Corporate Woods Parkway fax 847-279-2520  
 Vernon Hills, Illinois 60061-3153 web www.stsconsultants.com

December 16, 2002

Ms. Verneta Simon, On-Scene Coordinator  
 Mr. Fred Micke, On-Scene Coordinator  
 U.S. Environmental Protection Agency, Region 5  
 77 W. Jackson Boulevard, SE-5J  
 Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois - STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

#### WORK COMPLETED FROM DECEMBER 9-13, 2002

1. No excavation of radiologically-impacted soil occurred at the site.
2. Verification signoffs were obtained from the USEPA for the verifications conducted in the northern slip area on December 6, 2002. The table below summarizes the signoffs received from the USEPA for the project.

**Summary of Signed Verification Forms**

Location	Grid Designation	USEPA Signature Date
Northern Slip Area	NN-PP, 42-45	12/10/2002
	JJ-OO, 8-11	12/10/2002
	JJ-OO, 11-13.5	12/10/2002
	JJ-OO, 13.5-16	12/10/2002
	CC-FF, 1-4	12/10/2002
	EE-FF, 12-14	12/10/2002
	SS-UU, 32-34	12/10/2002
	XX, 18	12/10/2002
	GG-HH.5, 32-38	12/3/02
	HH.5-KK, 32-38	12/3/02
	KK-LL.5, 32-38	12/3/02
	LL.5-MM, 32-38	12/3/02
	OO-TT, 17-19.5	12/3/02
	OO-TT, 19.5-22	12/3/02
	RR-SS, 43-45	11/19/02
	KK-MM.5, 54-56.5	11/19/02
	KK-OO, 41-44	11/19/02
Southern Slip	E-K, 1-13	11/19/02
	C-E, 9.5-10.5	11/19/02
	F-J, 29-35	10/18/02

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3. With the completion of the excavation of the impacted materials, area air monitoring was discontinued based on verbal approval by USEPA on December 6. The verbal approval was confirmed in writing by USEPA on December 13. Personal air monitoring was conducted on an individual in each field crew involved in the gamma surveys for test pits and grading. The results will be provided in the next weekly report. Air monitoring results for the previous week (see attached) indicate no exceedances of the allowable limits were measured in air monitoring conducted between December 2 and 6, 2002.
4. Test pits were excavated to locate existing utilities and proposed caissons. The excavations were surveyed for elevated gamma radiation as the excavations proceeded. No elevated gamma readings were measured during these operations.
5. Localized grading phase (Phase III) gamma survey activities continued. The lift survey process was completed in grid locations 16, 25, 34, 39 and 40 (refer to Figure 1). No elevated gamma readings were measured during these operations.
6. A granite cobble roadway was exposed during the lift survey in the southern portion of grid 26. A gamma survey indicated elevated gamma measurements (about 20,000 cpm) that appear to be associated with the cobbles. Neither the overlying or underlying soil indicated elevated gamma emissions. USEPA was contacted on December 13 and agreed that this area did not have to be handled as impacted material since the elevated gamma readings were attributable to the granite cobbles.
7. Lift surveys and grading of the historical fill was conducted in grids 17, 26, 28 and 35. No elevated gamma readings were encountered in grid 17. Several small isolated areas of slightly elevated gamma readings were measured near the southern boundary of grid 26 and in the northeast corner of grid 35. The grid 35 areas occur near the western boundary of the southern slip (slip E). An area of slightly elevated gamma readings was also discovered during the initial grubbing in the northwest corner of grid 28. All of the areas of elevated gamma readings were roped off and access restricted (exclusion zones).

#### **PLANNED WORK FOR THE DECEMBER 16-20, 2002**

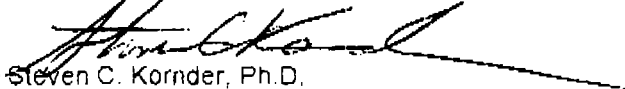
1. Grubbing (tree/sod removal) and site-wide grading will continue. These activities will be surveyed for potential radiological impacts in accordance with the work plan.
2. The series of small isolated areas of slightly elevated gamma readings (about 20,000 cpm) measured near the southern boundary of grid 26 and northeastern corner of 35 will continue to be investigated to determine if the measurements are associated with granite cobbles or impacted material. No excavation of this radiologically-impacted material is currently planned.
3. Test pits for locating existing utilities and proposed caissons will be conducted at the project site. These areas will be surveyed for elevated gamma radiation as explorations proceed.
4. The USEPA was requested to provide comments regarding the casing survey (STS, 11/6/02) conducted below the watertable in the boring E-25 area of the southern slip.
5. Personal air monitoring will be conducted on a single individual in each field crew involved in the gamma surveys for the test pits and grading operations. Area air monitoring will not be reinstated unless the discovery of radiologically-impacted materials necessitates additional excavation activities.

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Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

**Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report**

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**North Monitor**

Week #9 12/02/02-12/08/02

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/2/02	453	1.03E-15	4.67E-13	
12/3/02	354	0.00E+00	0.00E+00	
12/4/02	460	0.00E+00	0.00E+00	
12/5/02	484	0.00E+00	0.00E+00	
12/6/02	470	0.00E+00	0.00E+00	
	2221	1.03E-15	4.67E-13	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

Eq A.8 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (North) = 2.10E-16 uCi/ml

Percentage of Release Limit of = 5.26%  
4E-15uCi/ml**South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/2/02	445	5.14E-16	2.29E-13	
12/3/02	335	0.00E+00	0.00E+00	
12/4/02	467	0.00E+00	0.00E+00	
12/5/02	478	0.00E+00	0.00E+00	
12/6/02	461	0.00E+00	0.00E+00	
	2186	5.14E-16	2.29E-13	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

Eq A.8 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (South) = 1.05E-16 uCi/ml

Percentage of Release Limit of = 2.62%  
4E-15uCi/ml**East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/2/02	445	1.57E-15	6.99E-13	
12/3/02	340	7.43E-16	2.53E-13	
12/4/02	485	0.00E+00	0.00E+00	
12/5/02	476	0.00E+00	0.00E+00	
12/6/02	469	8.58E-16	4.46E-13	
	2195	3.27E-15	1.40E-12	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

Eq A.8 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (East) = 6.38E-16 uCi/ml

Percentage of Release Limit of = 16.95%  
4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
12/2/02	451	0.00E+00	0.00E+00	
12/3/02	353	0.00E+00	0.00E+00	
12/4/02	449	5.19E-16	2.33E-13	
12/5/02	478	0.00E+00	0.00E+00	
12/6/02	472	0.00E+00	0.00E+00	
	2203	5.19E-16	2.33E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = 1.06E-16 uCi/ml

Percentage of Release Limit of = 2.64%

## Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 9

December 2, 2002 - December 6, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
N2027	12/2/02	7:10am	2:43pm	453	52	2.39E+07	12/3/02	41	13	0.93333	1.44E-14	12/6/02	12	10	0.067	1.03E-15	25.74%
S2027	12/2/02	7:12am	2:37pm	445	53	2.34E+07	12/3/02	44	13	1.03333	1.56E-14	12/6/02	11	10	0.033	5.14E-16	12.85%
E2027	12/2/02	7:15am	2:40pm	446	52	2.28E+07	12/3/02	67	13	1.8	2.83E-14	12/6/02	13	10	0.1	1.57E-15	39.30%
W2027	12/2/02	7:10am	2:41pm	461	55	2.46E+07	12/3/02	40	13	0.8	1.32E-14	12/6/02	10	10	0	0.00E+00	0.00%
N2028	12/3/02	7:08am	1:00pm	364	52	1.82E+07	12/4/02	24	9	0.5	9.86E-15	12/6/02	10	11	0	0.00E+00	0.00%
S2028	12/3/02	7:10am	12:45pm	335	56	1.86E+07	12/4/02	19	9	0.33333	8.46E-15	12/6/02	8	11	0	0.00E+00	0.00%
E2028	12/3/02	7:07am	12:47pm	340	48	1.62E+07	12/4/02	17	9	0.26667	5.94E-15	12/6/02	12	11	0.033	7.43E-16	18.57%
W2028	12/3/02	7:05am	12:58pm	363	55	1.92E+07	12/4/02	21	9	0.4	7.46E-15	12/6/02	10	11	0	0.00E+00	0.00%
N2029	12/4/02	6:53am	2:33pm	480	51	2.33E+07	12/5/02	26	10	0.53333	8.27E-15	12/6/02	10	11	0	0.00E+00	0.00%
S2029	12/4/02	6:50am	2:37pm	467	52	2.41E+07	12/5/02	21	10	0.36667	5.49E-15	12/6/02	8	11	0	0.00E+00	0.00%
E2029	12/4/02	6:50am	2:35pm	465	52	2.40E+07	12/5/02	19	10	0.3	4.51E-15	12/6/02	11	11	0	0.00E+00	0.00%
W2029	12/4/02	7:10am	2:39pm	449	52	2.31E+07	12/5/02	23	10	0.43333	6.75E-15	12/6/02	12	11	0.033	5.19E-16	12.98%
N2030	12/5/02	6:57am	3:01pm	484	56	2.69E+07	12/6/02	66	10	1.86667	2.51E-14	12/10/02	7	10	0	0.00E+00	0.00%
S2030	12/5/02	7:01am	2:59pm	478	54	2.66E+07	12/6/02	83	10	2.43333	3.43E-14	12/10/02	9	10	0	0.00E+00	0.00%
E2030	12/5/02	7:04am	3:00pm	476	52	2.45E+07	12/6/02	67	10	1.9	2.79E-14	12/10/02	7	10	0	0.00E+00	0.00%
W2030	12/5/02	7:00am	2:58pm	478	52	2.46E+07	12/6/02	57	10	1.56667	2.29E-14	12/10/02	10	10	0	0.00E+00	0.00%
N2031	12/6/02	7:00am	2:50pm	470	47	2.19E+07	12/9/02	28	11	0.56667	9.33E-15	12/11/02	9	10	0	0.00E+00	0.00%
S2031	12/6/02	7:11am	2:52pm	481	52	2.38E+07	12/9/02	24	11	0.43333	6.58E-15	12/11/02	8	10	0	0.00E+00	0.00%
E2031	12/6/02	7:05am	2:54pm	489	54	2.51E+07	12/9/02	30	11	0.63333	9.16E-15	12/11/02	12	10	0.067	9.58E-16	23.94%
W2031	12/6/02	6:58am	2:50pm	472	56	2.62E+07	12/9/02	29	11	0.6	8.26E-15	12/11/02	10	10	0	0.00E+00	0.00%



# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 9 December 2 - December 6, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
12/2/02	Roger Petty	PAM2062	002-574	2.5	458	1145000	12/3/02	17	13	0.13	2.94E-14
12/2/02	Lindsay Aschlm	PAM2063	002-766	2.5	457	1142500	12/3/02	15	13	0.07	1.47E-14
12/3/02	Lindsay Aschlm	PAM2064	002-766	2.5	365	912500	12/4/02	8	9	0.00	0.00E+00
12/3/02	Roger Petty	PAM2065	002-574	2.5	445	1112500	12/4/02	8	9	0.00	0.00E+00
12/4/02	Roger Petty	PAM2066	002-574	2.5	457	1142500	12/5/02	9	10	0.00	0.00E+00
12/4/02	Lindsay Aschlm	PAM2067	002-766	2.5	465	1162500	12/5/02	8	10	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 9 December 2 - December 6, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
12/2/02	Roger Petty	PAM2062	002-574	2.5	458	1145000	12/6/02	8	10	0.00	0.00E+00	0.00%
12/2/02	Lindsay Aschlm	PAM2063	002-766	2.5	457	1142500	12/6/02	10	10	0.00	0.00E+00	0.00%

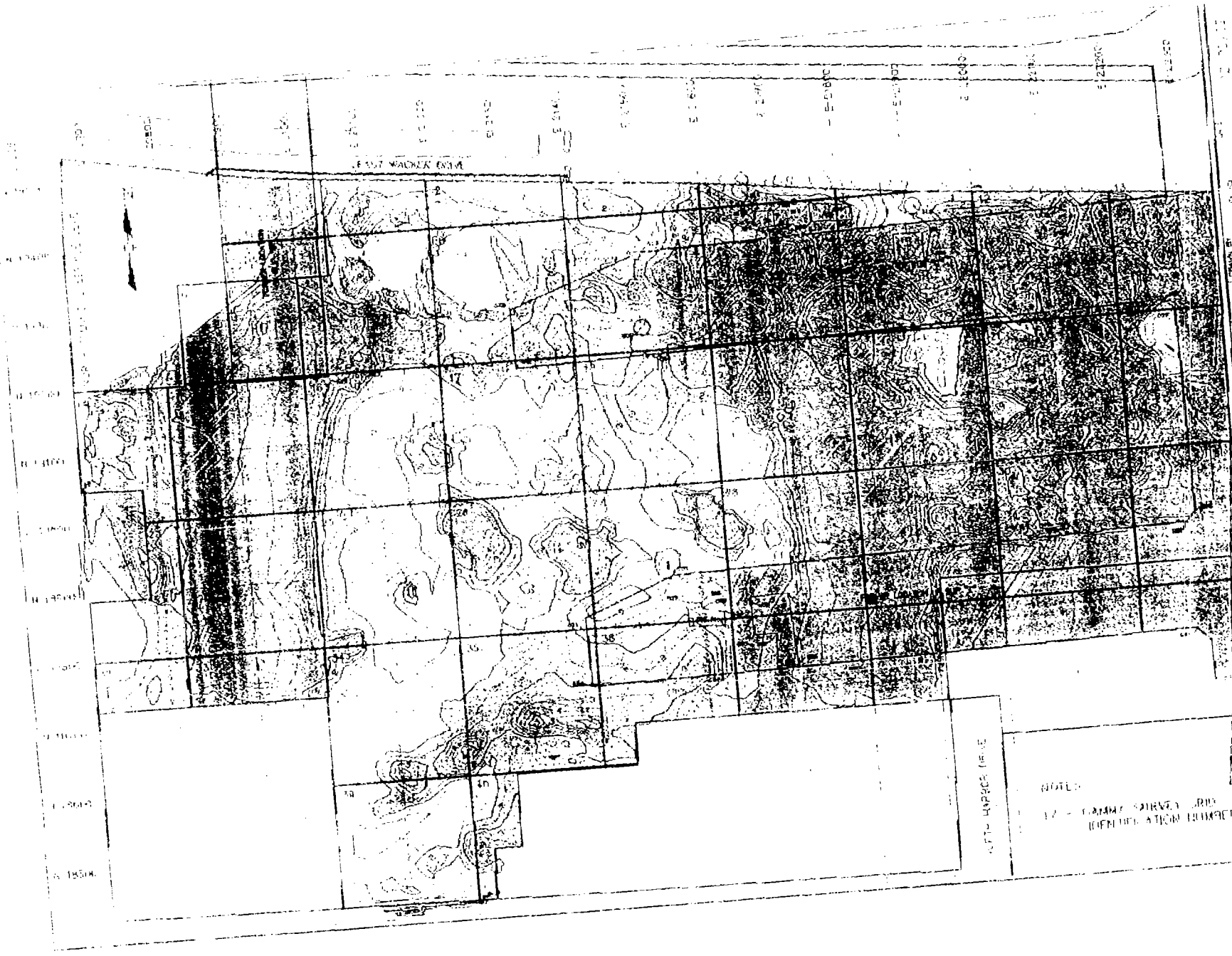
Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml

1000 1000 1000



GRADING PHASE GAMMA SURVEY GRID



1000 1000 1000

NOTES:  
1. - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER

## STS Consultants, Ltd.

250 Corporate Woods Parkway  
Vernon Hills, IL 60061  
Phone: (847) 279-2500  
FAX: (847) 279-2512



### FACSIMILE TRANSMISSION

**Date:** December 16, 2002

**To:** Vemeta Simon/Fred Micke USEPA Fax # 312-353-9176

Kara Hughes Lakeshore East, LLC Fax # 312-642-2773

Sean Bezark Altheimer & Gray Fax # 312-715-4800

Barbara Magei Karaganis, White & Magei Ltd Fax #: 312-836-9083

Mark Krippel Kerr-McGee Chemical LLC Fax #: 600-231-0990

Pages being transmitted, incl. Cover: 10

**CC:** **Fax No.:**

**From:** Steve Komder **Phone:** 847-279-2500

**Re:** Lakeshore East, 221 N. Columbus Dr., Chicago, IL

☐ Urgent ☐ For Signature ☐ For Review ☐ Please Comment/Reply ☐ As Requested ☐ Original to Follow

#### Message:

Attached is the weekly report for the Lakeshore East site at 221 N. Columbus Drive in Chicago, IL. Please contact me with any questions.

**IMPORTANT:** This facsimile is intended only for the individual or entity to whom it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this facsimile is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return this facsimile to us at the above address via the United States Postal Service. Thank you.

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL (847) 279-2500 IMMEDIATELY

**STS CONSULTANTS**

STS Consultants, Ltd.  
750 Corporate Woods Parkway  
Vernon Hills, Illinois 60061-3153

voice 847-279-2500  
fax 847-279-2520  
web www.stsconsultants.com

12/11/02  
2.1

December 11, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois - STS Project  
No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from December 2-6, 2002

1. Excavation of radiologically impacted soil (Phase II) was completed in the former northern slip (slip D). The table below summarizes the quantity of radiologically-impacted material excavated during this week and the cumulative total for the project. It should be noted that the partial load (3/4 load) may temporary remain containerized at the site pending the potential discovery of additional material during the grading phase.

**Impacted Soil Loading Summary**

Containers Loaded December 2-6, 2002	Cumulative Project Total
8-3/4	156-3/4

2. With the completion of the excavation of the known radiologically impacted materials, a verbal request was made, and approved by USEPA, to discontinue area air monitoring on Friday December 6. Per USEPA requests, personal air monitoring will continue to be conducted by the field crews actively involved in the gamma surveys for the grading phase. The formal written request to discontinue the area monitoring will be submitted to the USEPA.
3. Area and personal air monitoring was performed at the site between December 2 and 6, 2002. The results will be provided in the next weekly report. Air monitoring results for the previous week (see attached) indicate no exceedances of the allowable limits were measured in air monitoring conducted between November 25 and 29, 2002.
4. Test pitting was conducted to determine utility locations. No elevated gamma readings were measured during the test pit operations.
5. Grading phase (Phase III) gamma survey activities continued in accordance with Section 5.7 of SOP-210. Lift surveys were conducted within the historical fill of grid locations 16, 25, 34 and 39 (refer to Figure 1). No elevated gamma readings were measurements during these lift-monitoring activities.
6. The USEPA conducted verification surveys in remediated areas ( NN-PP, 42-45; JJ-OO, 8-16; CC-FF, 1-4; EE-FF, 12-14; SS-UU, 32-34 and XX, 18) of the northern slip area on December 6, 2002. Verification signoff forms for these areas will be forwarded to the USEPA on completion of the verification sample analysis. The table below summarizes the signoffs received thus far from the USEPA for the project.

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#### Summary of Signed Verification Forms

Location	Grid Designation	USEPA Signature Date
Northern Slip Area	GG-HH.5, 32-38	12/3/02
	HH-5-KK, 32-38	12/3/02
	KK-LL.5, 32-38	12/3/02
	LL-5-MM, 32-38	12/3/02
	OO-TT, 17-19.5	12/3/02
	OO-TT, 19.5-22	12/3/02
	RR-SS, 43-45	11/19/02
	KK-MM.5, 54-56.5	11/19/02
	KK-OO, 41-44	11/19/02
Southern Slip	E-K, 1-13	11/19/02
	C-E, 9.5-10.5	11/19/02
	F-J, 29-35	10/18/02


#### Planned Work for the December 9-13, 2002

- 1 Verification sign-off forms with sample analyses from the areas surveyed on Friday December 6, 2002 will be transmitted to the USEPA for signoff.
- 2 Grading phase surveying will continue in the central area of the project site where localized areas of historical fill material are present.
- 3 Test pitting conducted to determine utility locations will be surveyed for radiological impacts.
- 4 Test pitting for caisson locations will be surveyed for radiological impacts.
- 5 The USEPA was requested to provide comments regarding the casing survey (STS, 11/6/02) conducted below the watertable in the boring E-25 area of the southern slip.
- 6 Grubbing (tree and sod removal) will be initiated mid-week. Site-wide grading may start on Friday December 13. These areas will be surveyed for radiological impacts in accordance with the work plan.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

  
Steven C. Kornder, Ph.D.  
Senior Project Geochemist

#### Attachments

cc Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Alzheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

North Monitor		Week #5 11/25/02-11/29/02		(High Volume)
Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	474	1.49E-15	7.06E-13	No work - Thanksgiving Day
11/26/02	473	5.03E-16	2.38E-13	
11/27/02	437	0.00E+00	0.00E+00	
11/28/02	0	0.00E+00	0.00E+00	
11/29/02	409	0.00E+00	0.00E+00	
1793		1.99E-15	9.44E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

Effluent Concentration (North) = 5.27E-16 uCi/ml

Percentage of Release Limit of = 13.16%  
4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	474	9.30E-16	4.41E-13	No work - Thanksgiving Day
11/26/02	466	4.65E-16	2.17E-13	
11/27/02	422	1.54E-15	6.50E-13	
11/28/02	0	0.00E+00	0.00E+00	
11/29/02	410	1.14E-15	4.67E-13	
1772		4.08E-15	1.77E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

Effluent Concentration (South) = 1.00E-15 uCi/ml

Percentage of Release Limit of = 25.04%  
4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	472	1.68E-15	7.93E-13	No work - Thanksgiving Day
11/26/02	465	0.00E+00	0.00E+00	
11/27/02	424	1.17E-15	4.96E-13	
11/28/02	0	0.00E+00	0.00E+00	
11/29/02	417	6.19E-16	2.58E-13	
1778		3.47E-15	1.55E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

Effluent Concentration (East) = 8.70E-16 uCi/ml

Percentage of Release Limit of = 21.75%  
4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	470	0.00E+00	0.00E+00	
11/26/02	470	0.00E+00	0.00E+00	
11/27/02	437	0.00E+00	0.00E+00	
11/28/02	0	0.00E+00	0.00E+00	No work - Thanksgiving Day
11/29/02	418	0.00E+00	0.00E+00	
	1795	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%



# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 8

November 25, 2002 - November 29, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit
							date analyzed	gross counts	big counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	big counts	net cpm	Concentration in uCi/ml	
N2023	11/25/02	6:57am	2:47pm	470	52	2.42E+07	11/26/02	38	10	0.93333	1.39E-14	11/29/02	13	10	0.1	1.49E-15	37.21%
S2023	11/25/02	6:55am	2:49pm	474	55	2.59E+07	11/26/02	58	10	1.6	2.23E-14	11/29/02	12	10	0.067	9.30E-16	23.28%
E2023	11/25/02	6:53am	2:45pm	472	46	2.15E+07	11/26/02	46	10	1.2	2.01E-14	11/29/02	13	10	0.1	1.88E-15	41.88%
W2023	11/25/02	7:00am	2:50pm	470	49	2.28E+07	11/26/02	29	10	0.63333	1.00E-14	11/29/02	9	10	0	0.00E+00	0.00%
N2024	11/26/02	6:59am	2:52pm	473	51	2.39E+07	11/27/02	38	11	0.9	1.36E-14	12/2/02	10	9	0.033	5.03E-16	12.57%
S2024	11/26/02	7:02am	2:48pm	466	56	2.59E+07	11/27/02	79	11	2.26667	3.16E-14	12/2/02	10	9	0.033	4.85E-16	11.62%
E2024	11/26/02	7:00am	2:46pm	466	50	2.30E+07	11/27/02	43	11	1.06667	1.67E-14	12/2/02	8	9	0	0.00E+00	0.00%
W2024	11/26/02	7:03am	2:53pm	470	66	2.61E+07	11/27/02	73	11	2.06667	2.86E-14	12/2/02	8	9	0	0.00E+00	0.00%
N2025	11/27/02	7:25am	2:42pm	437	50	2.17E+07	11/29/02	22	10	0.4	6.66E-15	12/2/02	9	9	0	0.00E+00	0.00%
S2025	11/27/02	7:30am	2:32pm	422	56	2.34E+07	11/29/02	29	10	0.63333	9.75E-15	12/2/02	12	9	0.1	1.54E-15	38.48%
E2025	11/27/02	7:29am	2:33pm	424	49	2.06E+07	11/29/02	30	10	0.66667	1.17E-14	12/2/02	11	9	0.067	1.17E-15	29.18%
W2025	11/27/02	7:23am	2:40pm	437	53	2.30E+07	11/29/02	18	10	0.26667	4.19E-15	12/2/02	8	9	0	0.00E+00	0.00%
No work on 11/28/02 Thanksgiving Day																	
N2026	11/28/02	7:11am	2:00pm	409	52	2.11E+07	12/2/02	26	9	0.56667	9.69E-15	12/4/02	9	9	0	0.00E+00	0.00%
S2026	11/29/02	7:10am	2:00pm	410	52	2.11E+07	12/2/02	28	9	0.63333	1.08E-14	12/4/02	11	9	0.067	1.14E-15	28.44%
E2026	11/29/02	7:05am	2:02pm	417	47	1.94E+07	12/2/02	24	9	0.5	9.28E-15	12/4/02	10	9	0.033	6.19E-16	15.47%
W2026	11/29/02	7:07am	2:05pm	418	50	2.07E+07	12/2/02	16	9	0.23333	4.08E-15	12/4/02	8	9	0	0.00E+00	0.00%

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 8 November 25 - November 29, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
11/26/02	W. Conception	PAM2053	002-574	2.5	481	1202500	11/28/02	8	10	0.00	0.00E+00
11/26/02	Lindsay Aschim	PAM2054	002-766	2.5	458	1145000	11/28/02	10	10	0.00	0.00E+00
11/26/02	W. Conception	PAM2055	002-766	2.5	460	1160000	11/27/02	16	11	0.17	3.66E-14
11/26/02	Lindsay Aschim	PAM2056	002-574	2.5	495	1237500	11/27/02	16	11	0.17	3.40E-14
11/27/02	Tim O'Brien	PAM2057	002-766	2.5	255	637500	11/29/02	8	10	0.00	0.00E+00
11/27/02	Lindsay Aschim	PAM2058	006-234	2.5	125	312500	11/29/02	10	10	0.00	0.00E+00
11/27/02	W. Conception	PAM2059	002-574	2.5	420	1050000	11/29/02	8	10	0.00	0.00E+00
11/29/02	Lindsay Aschim	PAM2060	006-234	2.5	453	1132500	12/2/02	8	9	0.00	0.00E+00
11/29/02	Roger Petty	PAM2061	002-766	2.5	452	1130000	12/2/02	12	9	0.10	2.23E-14

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.

SAF 205 2535 P.07/09

ETS Consultants, Ltd.

DEC-11-2002 09:01

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 8 November 25 - November 29, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

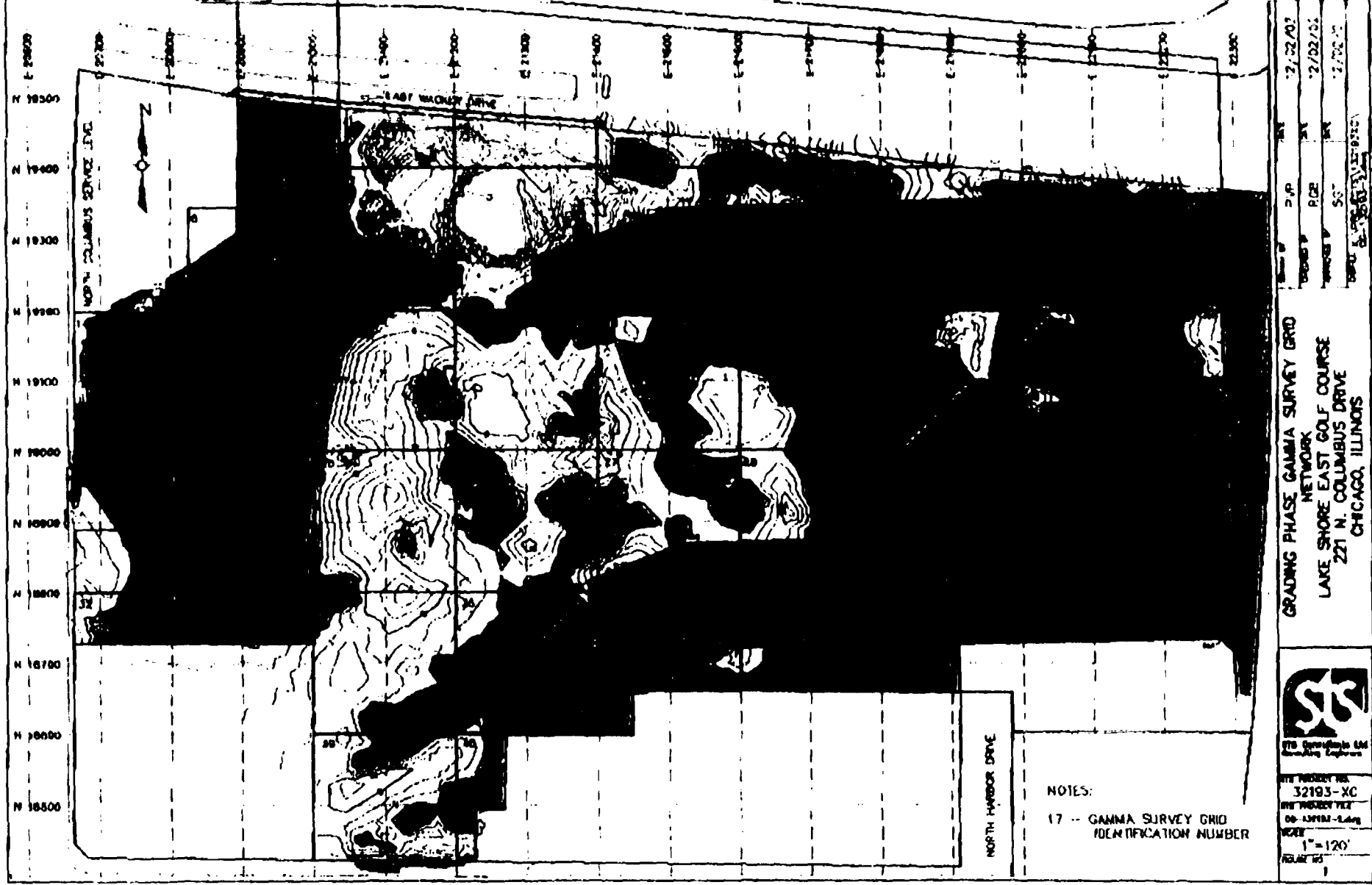
Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
11/26/02	W. Concepcion	PAM2055	002-788	2.5	480	1150000	12/2/02	8	9	0.00	0.00E+00	0.00%
11/26/02	Lindsay Aschum	PAM2056	002-574	2.5	495	1237500	12/2/02	9	9	0.00	0.00E+00	0.00%
11/29/02	Roger Petty	PAM2061	002-788	2.5	452	1130000	12/4/02	8	9	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



**STS Consultants, Ltd.**

750 Corporate Woods Parkway  
Vernon Hills, IL 60061  
Phone: (847) 279-2500  
FAX: (847) 279-2510

**FACSIMILE TRANSMISSION****Date:** December 11, 2002**To:** Verneta Simon/Fred Micke USEPA Fax #: 312-353-9176

Kara Hughes Lakeshore East, LLC Fax #: 312-642-2773

Sean Bezark Altheimer &amp; Gray Fax #: 312-715-4800

Barbara Magel Karaganis, White &amp; Magel Ltd. Fax #: 312-836-9083

Mark Krippel Kerr-McGee Chemical LLC Fax #: 630-231-3990

**Pages being transmitted, incl. Cover:** 9**CC:** **Fax No.:****From:** Steve Kornder **Phone:** 847-279-2500**Re:** Lakeshore East, 221 N. Columbus Dr., Chicago, IL☐ Urgent ☐ For Signature ☐ For Review ☐ Please Comment/Reply ☐ As Requested ☐ Original to Follow**Message:**

Attached is the weekly report for the Lakeshore East site at 221 N. Columbus Drive in Chicago, IL.  
Please contact me with any questions.

**IMPORTANT:** This facsimile is intended only for the of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this facsimile is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return this facsimile to us at the above address via the United States Postal Service. Thank you.

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**STS CONSULTANTS**STS Consultants, Ltd.  
750 Corporate Woods Parkway  
Vernon Hills, Illinois 60061-3153voice 847-279-2500  
fax 847-279-2520  
web www.stsconsultants.com

December 11, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois - STS Project  
No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from December 2-6, 2002

1. Excavation of radiologically impacted soil (Phase II) was completed in the former northern slip (slip D). The table below summarizes the quantity of radiologically-impacted material excavated during this week and the cumulative total for the project. It should be noted that the partial load (3/4 load) may temporary remain containerized at the site pending the potential discovery of additional material during the grading phase.

**Impacted Soil Loading Summary**

Containers Loaded December 2-6, 2002	Cumulative Project Total
8-3/4	156-3/4

2. With the completion of the excavation of the known radiologically impacted materials, a verbal request was made, and approved by USEPA, to discontinue area air monitoring on Friday December 6. Per USEPA requests, personal air monitoring will continue to be conducted by the field crews actively involved in the gamma surveys for the grading phase. The formal written request to discontinue the area monitoring will be submitted to the USEPA.
3. Area and personal air monitoring was performed at the site between December 2 and 6, 2002. The results will be provided in the next weekly report. Air monitoring results for the previous week (see attached) indicate no exceedances of the allowable limits were measured in air monitoring conducted between November 25 and 29, 2002.
4. Test pitting was conducted to determine utility locations. No elevated gamma readings were measured during the test pit operations.
5. Grading phase (Phase III) gamma survey activities continued in accordance with Section 5.7 of SOP-210. Lift surveys were conducted within the historical fill of grid locations 16, 25, 34 and 39 (refer to Figure 1). No elevated gamma readings were measurements during these lift-monitoring activities.
6. The USEPA conducted verification surveys in remediated areas ( NN-PP, 42-45; JJ-OO, 8-16; CC-FF, 1-4; EE-FF, 12-14; SS-UU, 32-34 and XX, 18) of the northern slip area on December 6, 2002. Verification signoff forms for these areas will be forwarded to the USEPA on completion of the verification sample analysis. The table below summarizes the signoffs received thus far from the USEPA for the project.

U.S. Environmental Protection Agency  
STS Project No. 1-32193-XC  
December 11 2002  
Page 2

#### Summary of Signed Verification Forms

Location	Grid Designation	USEPA Signature Date
Northern Slip Area	GG-HH.5, 32-38	12/3/02
	HH.5-KK. 32-38	12/3/02
	KK-LL.5, 32-38	12/3/02
	LL.5-MM, 32-38	12/3/02
	OO-TT, 17-19.5	12/3/02
	OO-TT, 19.5-22	12/3/02
	RR-SS, 43-45	11/19/02
	KK-MM.5, 54-56.5	11/19/02
Southern Slip	KK-OO, 41-44	11/19/02
	E-K, 1-13	11/19/02
	C-E, 9.5-10.5	11/19/02
	F-J, 29-35	10/18/02

#### Planned Work for the December 9-13, 2002

- 1 Verification sign-off forms with sample analyses from the areas surveyed on Friday December 6, 2002 will be transmitted to the USEPA for signoff
- 2 Grading phase surveying will continue in the central area of the project site where localized areas of historical fill material are present.
- 3 Test pitting conducted to determine utility locations will be surveyed for radiological impacts.
- 4 Test pitting for caisson locations will be surveyed for radiological impacts.
- 5 The USEPA was requested to provide comments regarding the casing survey (STS, 11/6/02) conducted below the watertable in the boring E-25 area of the southern slip.
- 6 Grubbing (tree and sod removal) will be initiated mid-week. Site-wide grading may start on Friday December 13. These areas will be surveyed for radiological impacts in accordance with the work plan.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

  
Steven C. Komder, Ph.D.  
Senior Project Geochemist

#### Attachments

cc Kara Hughes, Lakeshore East, LLC  
Barbara Magel, Karaganis, White & Magel

Sean Bezark, Altheimer & Gray  
Mark Krippel, Kerr-McGee Chemical LLC

## Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

### North Monitor

Week #8 11/25/02-11/29/02

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	474	1.49E-15	7.06E-13	No work - Thanksgiving Day
11/26/02	473	5.03E-16	2.38E-13	
11/27/02	437	0.00E+00	0.00E+00	
11/28/02	0	0.00E+00	0.00E+00	
11/29/02	409	0.00E+00	0.00E+00	
1793		1.99E-15	9.44E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

#### Time Weighted Weekly

Effluent Concentration (North) = 5.27E-16 uCi/ml

Percentage of Release Limit of = 13.16%  
4E-15uCi/ml

### South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	474	9.30E-16	4.41E-13	No work - Thanksgiving Day
11/26/02	466	4.65E-16	2.17E-13	
11/27/02	422	1.54E-15	6.50E-13	
11/28/02	0	0.00E+00	0.00E+00	
11/29/02	410	1.14E-15	4.67E-13	
1772		4.08E-15	1.77E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

#### Time Weighted Weekly

Effluent Concentration (South) = 1.00E-15 uCi/ml

Percentage of Release Limit of = 25.04%  
4E-15uCi/ml

### East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	472	1.68E-15	7.93E-13	No work - Thanksgiving Day
11/26/02	465	0.00E+00	0.00E+00	
11/27/02	424	1.17E-15	4.96E-13	
11/28/02	0	0.00E+00	0.00E+00	
11/29/02	417	6.19E-16	2.58E-13	
1778		3.47E-15	1.55E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

#### Time Weighted Weekly

Effluent Concentration (East) = 8.70E-16 uCi/ml

Percentage of Release Limit of = 21.75%  
4E-15uCi/ml



**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/25/02	470	0.00E+00	0.00E+00	
11/26/02	470	0.00E+00	0.00E+00	
11/27/02	437	0.00E+00	0.00E+00	
11/28/02	0	0.00E+00	0.00E+00	No work - Thanksgiving Day
11/29/02	418	0.00E+00	0.00E+00	
	1795	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%

Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)  
Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 8

November 26, 2002 - November 29, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit
							date analyzed	gross counts	big counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	big counts	net cpm	Concentration in uCi/ml	
N2023	11/25/02	6:57am	2:47pm	470	52	2.42E+07	11/26/02	38	10	0.93333	1.39E-14	11/29/02	13	10	0.1	1.49E-15	37.21%
S2023	11/25/02	6:55am	2:49pm	474	55	2.58E+07	11/26/02	58	10	1.6	2.23E-14	11/29/02	12	10	0.067	9.30E-16	23.28%
E2023	11/25/02	6:53am	2:45pm	472	46	2.15E+07	11/26/02	46	10	1.2	2.01E-14	11/29/02	13	10	0.1	1.68E-15	41.88%
W2023	11/25/02	7:00am	2:50pm	470	49	2.28E+07	11/26/02	29	10	0.63333	1.00E-14	11/29/02	9	10	0	0.00E+00	0.00%
N2024	11/26/02	7:02am	2:52pm	473	51	2.39E+07	11/27/02	38	11	0.9	1.36E-14	12/2/02	10	9	0.033	5.03E-16	12.57%
S2024	11/26/02	7:02am	2:48pm	468	56	2.58E+07	11/27/02	79	11	2.26667	3.16E-14	12/2/02	10	9	0.033	4.65E-16	11.62%
E2024	11/26/02	7:00am	2:45pm	465	50	2.30E+07	11/27/02	43	11	1.06667	1.67E-14	12/2/02	8	9	0	0.00E+00	0.00%
W2024	11/26/02	7:03am	2:53pm	470	66	2.61E+07	11/27/02	73	11	2.06667	2.80E-14	12/2/02	8	9	0	0.00E+00	0.00%
N2025	11/27/02	7:25am	2:42pm	437	50	2.17E+07	11/28/02	22	10	0.4	6.66E-15	12/2/02	9	9	0	0.00E+00	0.00%
S2025	11/27/02	7:30am	2:32pm	422	56	2.34E+07	11/29/02	29	10	0.63333	9.75E-15	12/2/02	12	9	0.1	1.54E-15	38.48%
E2025	11/27/02	7:29am	2:33pm	424	49	2.06E+07	11/29/02	30	10	0.66667	1.17E-14	12/2/02	11	9	0.067	1.17E-15	29.18%
W2025	11/27/02	7:23am	2:40pm	437	53	2.30E+07	11/29/02	18	10	0.26667	4.19E-15	12/2/02	8	9	0	0.00E+00	0.00%
No work on 11/28/02 Thanksgiving Day																	
N2026	11/29/02	7:11am	2:00pm	409	52	2.11E+07	12/2/02	26	9	0.56667	9.69E-15	12/4/02	9	9	0	0.00E+00	0.00%
S2026	11/29/02	7:10am	2:00pm	410	52	2.11E+07	12/2/02	28	9	0.63333	1.08E-14	12/4/02	11	9	0.067	1.14E-16	28.44%
E2026	11/29/02	7:05am	2:02pm	417	47	1.84E+07	12/2/02	24	9	0.5	9.28E-15	12/4/02	10	9	0.033	6.19E-16	15.47%
W2026	11/29/02	7:07am	2:05pm	418	50	2.07E+07	12/2/02	16	9	0.23333	4.06E-15	12/4/02	8	9	0	0.00E+00	0.00%

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 8 November 25 - November 29, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
11/26/02	W. Conception	PAM2053	002-574	2.5	481	1202500	11/26/02	8	10	0.00	0.00E+00
11/26/02	Lindsay Aschm	PAM2054	002-766	2.5	458	1145000	11/26/02	10	10	0.00	0.00E+00
11/26/02	W. Conception	PAM2055	002-766	2.5	460	1160000	11/27/02	10	11	0.17	3.66E-14
11/26/02	Lindsay Aschm	PAM2056	002-574	2.5	495	1237500	11/27/02	10	11	0.17	3.40E-14
11/27/02	Tim O'Brien	PAM2057	002-766	2.5	255	637500	11/29/02	8	10	0.00	0.00E+00
11/27/02	Lindsay Aschm	PAM2058	006-234	2.5	125	312500	11/29/02	10	10	0.00	0.00E+00
11/27/02	W. Conception	PAM2059	002-574	2.5	420	1050000	11/29/02	8	10	0.00	0.00E+00
11/28/02	Lindsay Aschm	PAM2060	006-234	2.5	453	1132500	12/2/02	8	9	0.00	0.00E+00
11/29/02	Roger Petty	PAM2061	002-766	2.5	452	1130000	12/2/02	12	9	0.10	2.23E-14

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.

DEC 29 2002 10:00 AM

STB Consultants, Ltd.

DEC-11-2002 05:01

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 8 November 25 - November 29, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
11/26/02	W. Concepcion	PAM2055	002-788	2.5	480	1150000	12/2/02	8	9	0.00	0.00E+00	0.00%
11/26/02	Lindsay Aschim	PAM2056	002-574	2.5	495	1237500	12/2/02	9	9	0.00	0.00E+00	0.00%
11/29/02	Roger Petty	PAM2061	002-788	2.5	452	1130000	12/4/02	8	9	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



<p>DATE: 12/22/02          TIME: 09:02          BY: [Signature]          CHECKED: [Signature]          SCALE: 1"=120'</p>		<p>PROJECT NO.          32193-XC          SHEET NO.          06-135193-2-049</p>
<p>GRADING PHASE GAMMA SURVEY GRID          NETWORK          LAKE SHORE EAST GOLF COURSE          221 N. COLUMBUS DRIVE          CHICAGO, ILLINOIS</p>		<p>DATE: 12/22/02          TIME: 09:02          BY: [Signature]          CHECKED: [Signature]          SCALE: 1"=120'</p>

NOTES:  
 17 -- GAMMA SURVEY GRID  
 IDENTIFICATION NUMBER



December 2, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois - STS Project  
No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from November 25-29, 2002

1. Excavation of radiologically impacted soil (Phase II) continued in the former northern slip (slip D) with the exception of November 28 (Thanksgiving Day). The table below summarizes the quantity of radiologically-impacted material excavated during this week and the cumulative total for the project.

**Impacted Soil Loading Summary**

Containers Loaded November 25-29, 2002	Cumulative Project Total
27	148

2. The USEPA conducted verification surveys in remediated areas (GG-MM, 32-38 and OO-TT, 17-22) of the northern slip on Friday, November 29, 2002. Verification signoff forms for these areas will be forwarded to the USEPA on completion of the verification sample analysis. The table below summarizes the signoffs received from the USEPA for the project.

**Summary of Signed Verification Forms**

Location	Grid Designation	USEPA Signature Date
Northern Slip Area	RR-SS, 43-45	11/19/02
	KK-MM.5, 54-56.5	11/19/02
	KK-OO, 41-44	11/19/02
Southern Slip	E-K, 1-13	11/19/02
	C-E, 9-10.5	11/19/02
	F-J, 29-35	10/18/02

3. Area and personal air monitoring was performed at the site on November 25 - 27 and 29, 2002. The results will be provided in the next weekly report. Air monitoring results for the previous week (see attached) indicate no exceedances of the allowable limits were measured in air monitoring conducted between November 18 and 22, 2002.

4. Small scale grading phase (Phase III) gamma survey activities were initiated on Tuesday November 26. Areas of historical fill without documented radiological impacts were excavated in lifts and surveyed in accordance with Section 5.7 of SOP-210. Specifically, lift surveys were conducted within the historical fill (shaded areas) of grid locations 34 and 39 (refer to Figure 1).

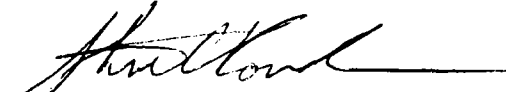
Planned Work for the December 2-6, 2002

1. Excavation activities will continue in the northern slip area (slip D). It is anticipated that the removal of radiologically impacted soil will be completed before the end of the week.
2. Site-wide grubbing and grading activities will not likely start until mid-December. However, grading phase surveying will continue in the central area of the project site where localized areas of historical fill material are present.
3. The USEPA will be requested to provide comments regarding the casing survey (STS, 11/6/02) conducted below the watertable in the boring E-25 area of the southern slip.
4. Verification forms with sample analyses from the areas surveyed the week of November 25-29 will be transmitted to the USEPA for signoff.
5. The USEPA will be contacted to conduct verification surveys in the remediated areas of the northern slip.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

North Monitor		Week #7 11/18/02-11/22/02		(High Volume)
Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/18/02	477	1.50E-15	7.18E-13	
11/19/02	447	0.00E+00	0.00E+00	
11/20/02	458	1.65E-15	7.56E-13	
11/21/02	469	9.94E-16	4.66E-13	
11/22/02	441	5.29E-16	2.33E-13	
2292		4.67E-15	2.17E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

Time Weighted Weekly	
Effluent Concentration (North) =	9.47E-16 uCi/ml
Percentage of Release Limit of =	23.68%
4E-15uCi/ml	

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/18/02	489	5.06E-16	2.47E-13	
11/19/02	458	0.00E+00	0.00E+00	
11/20/02	451	0.00E+00	0.00E+00	
11/21/02	470	0.00E+00	0.00E+00	
11/22/02	438	0.00E+00	0.00E+00	
2306		5.06E-16	2.47E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

Time Weighted Weekly	
Effluent Concentration (South) =	1.07E-16 uCi/ml
Percentage of Release Limit of =	2.68%
4E-15uCi/ml	

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/18/02	478	0.00E+00	0.00E+00	
11/19/02	497	0.00E+00	0.00E+00	
11/20/02	450	0.00E+00	0.00E+00	
11/21/02	466	4.91E-16	2.29E-13	
11/21/02	446	0.00E+00	0.00E+00	
2337		4.91E-16	2.29E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

Time Weighted Weekly	
Effluent Concentration (East) =	9.79E-17 uCi/ml
Percentage of Release Limit of =	2.45%
4E-15uCi/ml	



**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/18/02	485	5.00E-16	2.43E-13	
11/19/02	464	5.12E-16	2.38E-13	
11/20/02	458	1.02E-15	4.67E-13	
11/21/02	468	9.09E-16	4.25E-13	
11/22/02	443	0.00E+00	0.00E+00	
	2318	2.94E-15	1.37E-12	

$$C_{avg} = \frac{\sum T_i \cdot C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**Effluent Concentration (West) = **5.92E-16 uCi/ml**Percentage of Release Limit of = **14.80%**

# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 7 November 18, 2002 - November 22, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
N2018	11/18/02	7:05am	3:02pm	477	51	2.41E+07	11/19/02	108	11	3.23333	4.83E-14	11/22/02	15	12	0.1	1.50E-15	37.38%
S2018	11/18/02	8:52am	3:01pm	489	49	2.37E+07	11/19/02	143	11	4.4	6.68E-14	11/22/02	13	12	0.033	5.06E-16	12.85%
E2018	11/18/02	7:04am	3:02pm	478	49	2.32E+07	11/19/02	112	11	3.36667	5.23E-14	11/22/02	9	12	0	0.00E+00	0.00%
W2018	11/18/02	8:50am	2:55pm	485	50	2.40E+07	11/19/02	155	11	4.8	7.20E-14	11/22/02	13	12	0.033	5.00E-16	12.50%
N2019	11/19/02	7:12am	2:39pm	447	50	2.22E+07	11/20/02	358	10	11.6	1.89E-13	11/25/02	11	12	0	0.00E+00	0.00%
S2019	11/19/02	8:53am	2:31pm	458	48	2.18E+07	11/20/02	357	10	11.5667	1.91E-13	11/25/02	10	12	0	0.00E+00	0.00%
E2019	11/19/02	8:50am	3:07pm	497	47	2.32E+07	11/20/02	338	10	10.9333	1.70E-13	11/25/02	10	12	0	0.00E+00	0.00%
W2019	11/19/02	8:53am	2:37pm	484	51	2.35E+07	11/20/02	347	10	11.2333	1.73E-13	11/25/02	13	12	0.033	5.12E-16	12.81%
N2020	11/20/02	7:16am	2:54pm	458	48	2.18E+07	11/21/02	488	9	15.9667	2.64E-13	11/25/02	15	12	0.1	1.65E-15	41.37%
S2020	11/20/02	7:21am	2:52pm	451	48	2.15E+07	11/21/02	468	9	15.3	2.57E-13	11/25/02	11	12	0	0.00E+00	0.00%
E2020	11/20/02	7:20am	2:50pm	450	51	2.27E+07	11/21/02	385	9	12.5333	1.99E-13	11/25/02	12	12	0	0.00E+00	0.00%
W2020	11/20/02	7:15am	2:53pm	458	52	2.36E+07	11/21/02	439	9	14.3333	2.19E-13	11/25/02	14	12	0.067	1.02E-15	25.46%
N2021	11/21/02	8:38am	2:27pm	489	52	2.42E+07	11/22/02	165	12	5.1	7.61E-14	11/26/02	12	10	0.067	9.94E-16	24.88%
S2021	11/21/02	8:50am	2:40pm	470	51	2.38E+07	11/22/02	125	12	3.76667	5.72E-14	11/26/02	8	10	0	0.00E+00	0.00%
E2021	11/21/02	8:52am	2:38pm	468	53	2.45E+07	11/22/02	150	12	4.6	6.77E-14	11/26/02	11	10	0.033	4.91E-16	12.27%
W2021	11/21/02	8:37am	2:25pm	468	57	2.64E+07	11/22/02	87	12	2.5	3.41E-14	11/26/02	12	10	0.067	9.09E-16	22.73%
N2022	11/22/02	7:00am	2:21pm	441	52	2.27E+07	11/25/02	16	12	0.13333	2.11E-15	11/27/02	12	11	0.033	5.29E-16	13.22%
S2022	11/22/02	7:01am	2:19pm	438	51	2.21E+07	11/25/02	12	12	0	0.00E+00	11/27/02	11	11	0	0.00E+00	0.00%
E2022	11/22/02	8:53am	2:19pm	446	52	2.30E+07	11/25/02	15	12	0.1	1.57E-15	11/27/02	9	11	0	0.00E+00	0.00%
W2022	11/22/02	8:58am	2:19pm	443	52	2.28E+07	11/25/02	11	12	0	0.00E+00	11/27/02	11	11	0	0.00E+00	0.00%

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 7 November 18 - November 22, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
11/18/02	Roger Petty	PAM2043	002-788	2.5	490	1225000	11/22/02	12	12	0.00	0.00E+00	0.00%
11/19/02	Jerry Krane	PAM2044	006-234	2.5	481	1202500	11/25/02	12	12	0.00	0.00E+00	0.00%
11/19/02	W. Concepcion	PAM2045	002-875	2.5	480	1200000	11/25/02	9	12	0.00	0.00E+00	0.00%
11/20/02	Lindsay Aschim	PAM2046	002-875	2.5	153	382500	11/25/02	11	12	0.00	0.00E+00	0.00%
11/20/02	Roger Petty	PAM2047	006-234	2.5	487	1217500	11/25/02	12	12	0.00	0.00E+00	0.00%
11/20/02	Jerry Krane	PAM2048	002-875	2.5	300	750000	11/25/02	10	12	0.00	0.00E+00	0.00%
11/21/02	Roger Petty	PAM2049	002-875	2.5	465	1182500	11/28/02	7	10	0.00	0.00E+00	0.00%
11/21/02	Lindsay Aschim	PAM2050	006-234	2.5	465	1182500	11/28/02	11	10	0.03	7.24E-15	1.45%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 7 November 18 - November 22, 2002

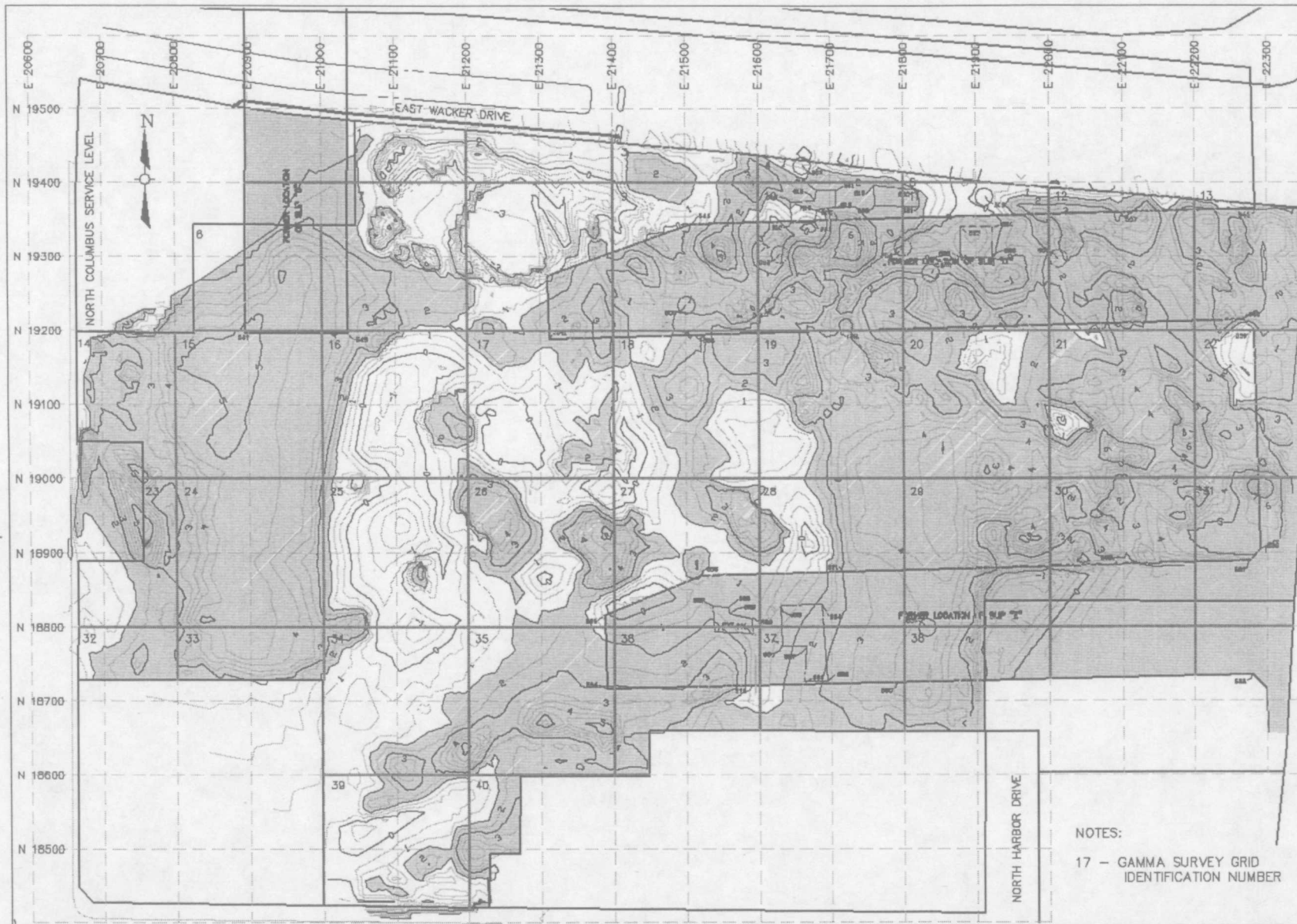
Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
11/18/02	Lindsay Aschim	PAM2042	002-675	2.5	485	1212500	11/19/02	11	11	0.00	0.00E+00
11/18/02	Roger Petty	PAM2043	002-766	2.5	490	1225000	11/19/02	15	11	0.13	2.75E-14 *
11/19/02	Jerry Krane	PAM2044	006-234	2.5	481	1202500	11/20/02	26	10	0.53	1.12E-13 *
11/19/02	W. Concepcion	PAM2045	002-675	2.5	480	1200000	11/20/02	27	10	0.57	1.19E-13 *
11/20/02	Lindsay Aschim	PAM2046	002-675	2.5	153	382500	11/21/02	16	9	0.23	1.54E-13 *
11/20/02	Roger Petty	PAM2047	006-234	2.5	487	1217500	11/21/02	38	9	0.97	2.00E-13 *
11/20/02	Jerry Krane	PAM2048	002-675	2.5	300	750000	11/21/02	19	9	0.33	1.12E-13 *
11/21/02	Roger Petty	PAM2049	002-675	2.5	485	1162500	11/22/02	21	12	0.30	6.51E-14 *
11/21/02	Lindsay Aschim	PAM2050	006-234	2.5	485	1162500	11/22/02	19	12	0.23	5.07E-14 *
11/22/02	Lindsay Aschim	PAM2051	002-574	2.5	455	1137500	11/25/02	8	12	0.00	0.00E+00
11/22/02	Roger Petty	PAM2052	006-234	2.5	455	1137500	11/25/02	10	12	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.



NOTES:  
17 - GAMMA SURVEY GRID  
IDENTIFICATION NUMBER



STS Consultants Ltd.  
Consulting Engineers

STS PROJECT NO.  
32193-XC  
STS PROJECT FILE  
00-132193-2.dwg  
SCALE  
1"=120'  
FIGURE NO.  
1

GRADING PHASE GAMMA SURVEY GRID  
NETWORK  
LAKE SHORE EAST GOLF COURSE  
221 N. COLUMBUS DRIVE  
CHICAGO, ILLINOIS

DRAWN BY	PVP	DATE	12/02/02
CHECKED BY	RCB	DATE	12/02/02
APPROVED BY	SGT	DATE	12/02/02
CADFILE	X:\PROJECTS\132193\00-132193-2.dwg		

11/27/2002 12:



November 25, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Drive, Chicago, Illinois - STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from November 18-22, 2002

1. Excavation of radiologically impacted soil (Phase II) continued in the former northern slip (slip D) and adjacent tee box area. The table below summarizes the quantity of radiologically-impacted material removed this week as well as the total removed during the project.

**Impacted Soil Loading Summary**

Containers Loaded November 18-22, 2002	Cumulative Project Total
34	121

2. Verification forms signed by the USEPA were received on November 19, 2002 for the surveying conducted by USEPA in the remediated sections of the southern and northern slip areas on Friday, November 15, 2002. The table below summarizes the signoffs received from the USEPA for the project.

**Summary of Signed Verification Forms**

Location	Grid Designation	USEPA Signature Date
Northern Slip Area	RR-SS, 43-45	11/19/02
	KK-MM.5, 54-56.5	11/19/02
	KK-OO, 41-44	11/19/02
Southern Slip	E-K, 1-13	11/19/02
	C-E, 9-10.5	11/19/02
	F-J, 29-35	10/18/02

3. Area and personal air monitoring was performed at the site from November 18-22, 2002. The results will be provided in the next weekly report. Air monitoring results for the previous week (see attached) indicate no exceedances of the allowable limits were measured in air monitoring conducted between November 11 and 15, 2002.
4. Test pits for locating existing utilities and future caissons were excavated in the southern slip area (slip E). These locations were surveyed for elevated gamma radiation as the explorations proceeded.

5. Traffic areas where the ground surface was disturbed were regularly surveyed for elevated radioactivity. This survey work will continue on an as-needed basis.

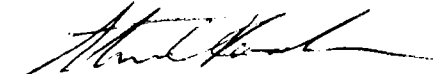
Planned Work for the November 25-29, 2002

1. Excavation activities will continue in the northern slip area (slip D). No site activities are planned for Thursday November 28, 2002 (Thanksgiving Day), but excavation will resume on Friday, November 29, 2002.
2. The USEPA will be requested to provide comments regarding the casing survey (STS, November 6, 2002) conducted below the watertable in the boring E-25 area of the southern slip.
3. The USEPA will be contacted to conduct verification surveys in the remediated areas of the northern slip and adjacent tee box area.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

## Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

North Monitor		Week #6 11/11/02-11/15/02		(High Volume)
Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/11/02	452	2.02E-15	9.13E-13	
11/12/02	432	6.85E-16	2.96E-13	
11/13/02	489	0.00E+00	0.00E+00	
11/14/02	452	2.18E-15	9.85E-13	
11/15/02	470	0.00E+00	0.00E+00	
2295		4.89E-15	2.19E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = 9.58E-16 uCi/ml

Percentage of Release Limit of = 23.90%  
4E-15uCi/ml

### South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/11/02	453	0.00E+00	0.00E+00	
11/12/02	498	0.00E+00	0.00E+00	
11/13/02	488	6.72E-16	3.28E-13	
11/14/02	440	0.00E+00	0.00E+00	
11/15/02	481	5.86E-16	2.82E-13	
2360		1.26E-15	6.10E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (South) = 2.58E-16 uCi/ml

Percentage of Release Limit of = 6.46%  
4E-15uCi/ml

### East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/11/02	446	5.56E-16	2.52E-13	
11/12/02	501	0.00E+00	0.00E+00	
11/13/02	490	1.10E-15	5.39E-13	
11/14/02	451	1.47E-15	6.63E-13	
11/15/02	483	0.00E+00	0.00E+00	
2371		3.14E-15	1.45E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (East) = 6.13E-16 uCi/ml

Percentage of Release Limit of = 15.34%  
4E-15uCi/ml



**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/11/02	449	0.00E+00	0.00E+00	
11/12/02	420	5.06E-16	2.13E-13	
11/13/02	492	0.00E+00	0.00E+00	
11/14/02	440	0.00E+00	0.00E+00	
11/15/02	471	9.90E-16	4.86E-13	
	2272	1.50E-15	6.79E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = 2.99E-16 uCi/ml

Percentage of Release Limit of = 7.47%

## Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 6

November 11, 2002 - November 15, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	blk counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	blk counts	net cpm	Concentration in uCi/ml	
N2013	11/11/02	7:18am	2:50pm	452	53	2.37E+07	11/12/02	222	11	7.03333	1.07E-13	11/15/02	18	14	0.133	2.02E-15	50.81%
S2013	11/11/02	7:15am	2:48pm	453	42	1.89E+07	11/12/02	281	11	8.33333	1.59E-13	11/15/02	14	14	0	0.00E+00	0.00%
E2013	11/11/02	7:16am	2:42pm	446	48	2.12E+07	11/12/02	180	11	4.96667	8.44E-14	11/15/02	15	14	0.033	5.66E-16	14.16%
W1013	11/11/02	7:16am	2:45pm	449	53	2.38E+07	11/12/02	280	11	8.3	1.27E-13	11/15/02	13	14	0	0.00E+00	0.00%
N2014	11/12/02	8:05am	3:17pm	432	41	1.78E+07	11/13/02	117	10	3.56667	7.32E-14	11/18/02	15	14	0.033	6.85E-16	17.11%
S2014	11/12/02	8:52am	3:10pm	498	50	2.47E+07	11/13/02	123	10	3.76667	5.50E-14	11/18/02	12	14	0	0.00E+00	0.00%
E2014	11/12/02	8:54am	3:15pm	501	53	2.63E+07	11/13/02	118	10	3.6	4.93E-14	11/18/02	11	14	0	0.00E+00	0.00%
W2014	11/12/02	8:05am	3:05pm	420	57	2.37E+07	11/13/02	107	10	3.23333	4.91E-14	11/18/02	15	14	0.033	5.06E-16	12.68%
N2015	11/13/02	7:09am	3:18pm	489	47	2.28E+07	11/14/02	325	12	10.4333	1.65E-13	11/18/02	13	14	0	0.00E+00	0.00%
S2015	11/13/02	7:05am	3:13pm	488	37	1.79E+07	11/14/02	405	12	13.1	2.64E-13	11/18/02	15	14	0.033	6.72E-16	16.79%
E2015	11/13/02	7:07am	3:17pm	490	45	2.19E+07	11/14/02	380	12	12.2667	2.02E-13	11/18/02	16	14	0.087	1.10E-15	27.49%
W2015	11/13/02	7:00am	3:12pm	492	40	1.95E+07	11/14/02	301	12	9.63333	1.78E-13	11/18/02	14	14	0	0.00E+00	0.00%
N2016	11/14/02	7:05am	2:37pm	452	37	1.66E+07	11/15/02	307	14	9.76667	2.12E-13	11/19/02	14	11	0.1	2.18E-15	54.38%
S2016	11/14/02	7:07am	2:27pm	440	50	2.18E+07	11/15/02	310	14	9.86667	1.63E-13	11/19/02	11	11	0	0.00E+00	0.00%
E2016	11/14/02	7:00am	2:31pm	451	55	2.46E+07	11/15/02	285	14	9.03333	1.32E-13	11/19/02	14	11	0.1	1.47E-15	38.66%
W2016	11/14/02	7:05am	2:25pm	440	51	2.22E+07	11/15/02	265	14	8.36667	1.36E-13	11/19/02	10	11	0	0.00E+00	0.00%
N2017	11/15/02	7:09am	2:59pm	470	52	2.42E+07	11/18/02	12	14	0	0.00E+00	11/20/02	8	10	0	0.00E+00	0.00%
S2017	11/15/02	7:06am	3:07pm	481	43	2.05E+07	11/18/02	16	14	0.06667	1.17E-15	11/20/02	11	10	0.033	5.66E-16	14.66%
E2017	11/15/02	7:07am	3:10pm	483	52	2.49E+07	11/18/02	18	14	0.13333	1.93E-15	11/20/02	10	10	0	0.00E+00	0.00%
W2017	11/15/02	7:16am	3:07pm	471	52	2.43E+07	11/18/02	13	14	0	0.00E+00	11/20/02	12	10	0.087	9.90E-16	24.75%

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 6 November 11 - November 15, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
11/11/02	Lindsay Aschim	PAM2030	002-574	2.5	487	1217500	11/12/02	29	11	0.60	1.24E-13 *
11/11/02	W. Concepcion	PAM2031	002-766	2.5	487	1217500	11/12/02	31	11	0.67	1.38E-13 *
11/12/02	Lindsay Aschim	PAM2032	002-766	2.5	494	1235000	11/13/02	32	10	0.73	1.50E-13 *
11/12/02	W. Concepcion	PAM2033	002-574	2.5	494	1235000	11/13/02	18	10	0.27	5.45E-14 *
11/13/02	Lindsay Aschim	PAM2034	002-766	2.5	488	1220000	11/14/02	28	12	0.47	9.65E-14 *
11/13/02	W. Concepcion	PAM2035	002-574	2.5	484	1210000	11/14/02	34	12	0.73	1.53E-13 *
11/14/02	W. Concepcion	PAM2036	002-766	2.5	450	1125000	11/15/02	38	14	0.80	1.79E-13 *
11/14/02	Lindsay Aschim	PAM2037	006-234	2.5	390	975000	11/15/02	24	14	0.33	8.63E-14 *
11/14/02	Jerry Krane	PAM2038	002-574	2.5	120	300000	11/15/02	23	14	0.30	2.52E-13 *
11/15/02	W. Concepcion	PAM2039	002-574	2.5	490	1225000	11/18/02	13	14	0.00	0.00E+00
11/15/02	Lindsay Aschim	PAM2040	002-766	2.5	230	575000	11/18/02	16	14	0.07	2.93E-14 *
11/15/02	Jerry Krane	PAM2041	006-234	2.5	235	587500	11/18/02	14	14	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 6 November 11 - November 15, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
11/11/02	Lindsay Aschim	PAM2030	002-574	2.5	487	1217500	11/15/02	16	14	0.07	1.38E-14	2.76%
11/11/02	W. Concepcion	PAM2031	002-788	2.5	487	1217500	11/15/02	11	14	0.00	0.00E+00	0.00%
11/12/02	Lindsay Aschim	PAM2032	002-788	2.5	494	1235000	11/18/02	13	14	0.00	0.00E+00	0.00%
11/12/02	W. Concepcion	PAM2033	002-574	2.5	494	1235000	11/18/02	14	14	0.00	0.00E+00	0.00%
11/13/02	Lindsay Aschim	PAM2034	002-788	2.5	488	1220000	11/18/02	15	14	0.03	8.89E-15	1.38%
11/13/02	W. Concepcion	PAM2035	002-574	2.5	484	1210000	11/18/02	14	14	0.00	0.00E+00	0.00%
11/14/02	W. Concepcion	PAM2036	002-788	2.5	450	1125000	11/19/02	11	11	0.00	0.00E+00	0.00%
11/14/02	Lindsay Aschim	PAM2037	006-234	2.5	390	975000	11/19/02	12	11	0.03	8.83E-15	1.73%
11/14/02	Jerry Krane	PAM2038	002-574	2.5	120	300000	11/19/02	9	11	0.00	0.00E+00	0.00%
11/15/02	Lindsay Aschim	PAM2040	002-788	2.5	230	575000	11/20/02	10	10	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



November 20, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois - STS  
Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from November 11-15 2002

1. Excavation of radiologically impacted soil (Phase II) in the former southern slip area (slip E) was completed. Excavation activities and air monitoring were moved to the northern slip area. The table below summarizes the quantity of radiologically-impacted material removed.

**Impacted Soil Loading Summary**

Containers Loaded November 11-15, 2002	Cumulative Project Total
28	87

2. The USEPA conducted verification surveys in remediated areas of the southern and northern slips during the afternoon of Friday November 15, 2002. Verification signoff forms for these areas will be forwarded to the USEPA shortly.
3. Measurements from surveyed locations confirm that the radiologically-impacted material in the northern portion of the E-25 excavation area has been removed (specifically boring B-8A, STS 9/19/2001). A verification survey of this area is awaiting a response from the USEPA on the casing survey results (STS, 11/6/02).
4. Area and personal air monitoring was performed at the site on November 11-15, 2002. The results will be provided in the next weekly report. During the previous week excavation and air monitoring activities were conducted only on Friday November 8. No exceedances of allowable limits were measured in the conducted air monitoring (see attached).

Planned Work for the November 18-22, 2002

1. Excavation activities will continue in the former northern slip area (slip D). Excavation activities will generally progress from the east toward the west.
2. Verification sign-off forms for the surveying conducted by USEPA on Friday November 15 will be forwarded to the USEPA for signature.

3. The USEPA will be requested to provide comments regarding the casing survey (STS, 11/6/02) conducted below the watertable in the boring E-25 area of the southern slip.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

## North Monitor

Week #5 11/4/02-11/8/02

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/4/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/5/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/6/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/7/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/8/02	411	1.13E-15	4.64E-13	
	411	1.13E-15	4.64E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = 1.13E-15 uCi/ml

Percentage of Release Limit of = 28.25%  
4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/4/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/5/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/6/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/7/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/8/02	403	1.77E-15	7.13E-13	
	403	1.77E-15	7.13E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (South) = 1.77E-15 uCi/ml

Percentage of Release Limit of = 44.25%  
4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/4/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/5/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/6/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/7/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/8/02	404	0.00E+00	0.00E+00	
	404	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (East) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%  
4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
11/4/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/5/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/6/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/7/02	0	0.00E+00	0.00E+00	NO WORK TODAY
11/8/02	367	0.00E+00	0.00E+00	
	367	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_s C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%



# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

## Week 5

November 4, 2002 - November 8, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Work on November 4, 2002																	
No Work on November 5, 2002																	
No Work on November 6, 2002																	
No Work on November 7, 2002																	
N2012	11/8/02	7:12am	2:03pm	411	52	2.12E+07	11/11/02	22	12	0.33333	5.67E-15	11/13/02	12	10	0.067	1.13E-15	28.37%
S2012	11/8/02	7:17am	2:00pm	403	51	2.04E+07	11/11/02	18	12	0.2	3.54E-15	11/13/02	13	10	0.1	1.77E-15	44.25%
E2012	11/8/02	7:19am	2:03pm	404	48	1.92E+07	11/11/02	14	12	0.06667	1.25E-15	11/13/02	8	10	0	0.00E+00	0.00%
W2012	11/8/02	7:57am	2:04pm	367	56	2.04E+07	11/11/02	13	12	0.03333	5.90E-16	11/13/02	10	10	0	0.00E+00	0.00%

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 5 November 4 - November 8, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
11/8/02	Roger Petty	PAM2028	002-766	2.5	475	1187500	11/11/02	8	12	0.00	0.00E+00
11/8/02	Lindsay Aschim	PAM2029	002-574	2.5	493	1232500	11/11/02	10	12	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 4 November 4 - November 8, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
No 4 Day Analysis Required During This Week												

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml

**STS Consultants, Ltd.**

750 Corporate Woods Parkway  
Vernon Hills, IL 60061  
Phone: (847) 279-2500  
FAX: (847) 279-2510

**FACSIMILE TRANSMISSION**

**Date:** November 12, 2002

**To:** Verneta Simon/Fred Micke USEPA Fax #: 312-353-9176

Kara Hughes Lakeshore East, LLC Fax #: 312-642-2773

Sean Bezark Altheimer & Gray Fax #: 312-715-4800

Barbara Magel Karaganis, White & Magel Ltd. Fax #: 312-836-9083

Mark Krippel Kerr-McGee Chemical LLC Fax #: 630-231-3990

**Pages being transmitted, incl. Cover:** 8

**CC:** **Fax No.:**

**From:** Steve Komder **Phone:** 847-279-2500

**Re:** Lakeshore East, 221 N. Columbus Dr., Chicago, IL

☐ Urgent ☐ For Signature ☐ For Review ☐ Please Comment/Reply ☐ As Requested ☐ Original to Follow

**Message:**

Attached is the weekly report for the Lakeshore East site at 221 N. Columbus Drive in Chicago, IL.  
Please contact me with any questions.

**IMPORTANT:** This facsimile is intended only for the of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this facsimile is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return this facsimile to us at the above address via the United States Postal Service. Thank you.

**IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL (847) 279-2500 IMMEDIATELY**

**STS CONSULTANTS**STS Consultants, Ltd.  
750 Corporate Woods Parkway  
Vernon Hills, Illinois 60061-3153voice 847-279-2500  
fax 847-279-2510  
web www.stsconsultants.com

November 12, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois - STS  
Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from November 4-8 2002

1. Excavation of radiologically impacted soils (Phase II) resumed in southern (former) slip area on Friday November 8, 2002. A total of 5 boxes of impacted soil were loaded on Friday.

**Impacted Soil Loading Summary**

Containers Loaded November 4 - 8, 2002	Cumulative Project Total
5	59

2. A written report was submitted to USEPA for review on November 6 with the results of the drilling program conducted to investigate the presence of radiologically-impacted soil beneath the water table within the southern slip area near boring location E-56 (refer to Work Plan Drawing 2).
3. Excavation of the known radiologically impacted materials in the southern slip appears complete with the exception of a limited area of impacted material in the northern portion of the E-56 excavation area. This material is in the immediate vicinity of sewer and water lines, but will be removed following the completion of stabilization methods for the utilities.
4. Area and personal air monitoring was performed at the site on Friday November 8, 2002. The results will be provided in the next weekly report. During the previous week excavation and air monitoring activities were conducted on October 28 and 29. No exceedances of allowable limits were measured in the air monitoring conducted on those days (see attached).

Planned Work for the November 11-15, 2002

1. Excavation activities will be shifted to northern slip area (former slip D). Air sampling will be moved to the north slip area.
2. USEPA will be contacted to conduct verification surveys in the remediated areas of the southern slip.

U.S. Environmental Protection Agency  
STS Project No. 1-32193-XC  
November 12, 2002  
Page 2

3. USEPA will be requested to provide comments regarding the drilling below the water table at E-56 in the south slip area.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.



Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

**North Monitor**      **Week #4 10/28/02-11/1/02**      **(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/28/02	423	5.51E-16	2.33E-13	No Work 10/30-11/1
10/29/02	432	0.00E+00	0.00E+00	
10/30/02	0	0.00E+00	0.00E+00	
10/31/02	0	0.00E+00	0.00E+00	
11/1/02	0	0.00E+00	0.00E+00	
855		5.51E-16	2.33E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

**Effluent Concentration (North) = 2.73E-16 uCi/ml**

Percentage of Release Limit of = 6.82%  
4E-15uCi/ml

## South Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/28/02	432	0.00E+00	0.00E+00	No Work 10/30-11/1
10/29/02	435	0.00E+00	0.00E+00	
10/30/02	0	0.00E+00	0.00E+00	
10/31/02	0	0.00E+00	0.00E+00	
11/1/02	0	0.00E+00	0.00E+00	
867		0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

**Effluent Concentration (South) = 0.00E+00 uCi/ml**

Percentage of Release Limit of = 0.00%  
4E-15uCi/ml

## East Monitor

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/28/02	427	0.00E+00	0.00E+00	No Work 10/30-11/1
10/29/02	413	1.17E-15	4.83E-13	
10/30/02	0	0.00E+00	0.00E+00	
10/31/02	0	0.00E+00	0.00E+00	
11/1/02	0	0.00E+00	0.00E+00	
840		1.17E-15	4.83E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

## Time Weighted Weekly

**Effluent Concentration (East) = 5.75E-16 uCi/ml**

Percentage of Release Limit of = 14.38%  
4E-15uCi/ml

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/28/02	418	0.00E+00	0.00E+00	No Work 10/30-11/1
10/29/02	438	0.00E+00	0.00E+00	
10/30/02	0	0.00E+00	0.00E+00	
10/31/02	0	0.00E+00	0.00E+00	
11/1/02	0	0.00E+00	0.00E+00	
856		0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_s \cdot C_i}{\sum T_s}$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = 0.00E+00 uCi/ml

Percentage of Release Limit of = 0.00%



# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 4

October 28, 2002 - November 1, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
N2010	10/28/02	7:10am	2:13pm	423	52	2.18E+07	10/29/02	20	8	0.4	6.61E-15	11/1/02	9	8	0.033	5.51E-16	13.78%
S2010	10/28/02	7:03am	2:15pm	432	55	2.35E+07	10/29/02	26	8	0.6	9.19E-15	11/1/02	8	8	0	0.00E+00	0.00%
E2010	10/28/02	7:05am	2:12pm	427	47	1.89E+07	10/29/02	22	8	0.46667	8.46E-15	11/1/02	8	8	0	0.00E+00	0.00%
W1010	10/28/02	7:12am	2:10pm	418	47	1.95E+07	10/29/02	24	8	0.63333	9.87E-15	11/1/02	7	8	0	0.00E+00	0.00%
N2011	10/29/02	7:06am	2:18pm	432	49	2.10E+07	10/30/02	18	9	0.3	5.16E-15	11/4/02	9	12	0	0.00E+00	0.00%
S2011	10/29/02	7:05am	2:20pm	435	42	1.81E+07	10/30/02	28	9	0.56667	1.13E-14	11/4/02	10	12	0	0.00E+00	0.00%
E2011	10/29/02	7:27am	2:20pm	413	50	2.05E+07	10/30/02	37	9	0.93333	1.84E-14	11/4/02	14	12	0.067	1.17E-15	29.36%
W2011	10/28/02	7:04am	2:22pm	438	62	2.26E+07	10/30/02	34	9	0.83333	1.33E-14	11/4/02	9	12	0	0.00E+00	0.00%
No Work on 10/30/02																	
No Work on 10/31/02																	
No Work on 11/1/02																	

**Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)**

Week 4 October 28 - November 1, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
10/28/02	Lindsay Aschim	PAM2025	002-675	2.5	435	1087500	10/29/02	10	8	0.07	1.55E-14*
10/28/02	W .Concepcion	PAM2026	002-766	2.5	435	1087500	10/29/02	6	8	0.00	0.00E+00
10/28/02	Jerry Krane	PAM2027	002-574	2.5	105	262500	10/29/02	7	8	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.

# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 4 October 28 - November 1, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
10/28/02	Lindsay Aschlm	PAM2025	002-875	2.5	435	1087500	11/1/02	8	8	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



November 6, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois - STS Project  
No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

**Work Completed from October 28 through November 1, 2002**

1. Excavation activities were only conducted on Monday October 28. A summary of the excavated material is provided in the table below.

**Impacted Soil Loading Summary**

Containers Loaded October 28, 2002	Cumulative Project Total
6	54

2. On Tuesday (October 29) four casings were installed to determine the extent of the impacted materials below the water table in the vicinity of boring E-25 (refer to Work Plan Drawing 2). A written report will be forwarded to the USEPA shortly.
3. Area and personal air monitoring was performed at the site on October 28 and 29. These results will be provided with next weeks report. Air monitoring results have not been attached for the previous week (October 21-25) since no excavation activities or air monitoring was conducted.

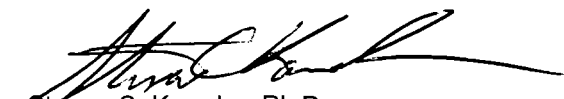
**Planned Work for the November 4 - 8, 2002**

1. Excavation activities have temporarily been halted, but will hopefully be resumed in the near future.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

  
Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

**STS Consultants, Ltd.**

750 Corporate Woods Parkway  
Vernon Hills, IL 60061  
Phone: (847) 279-2500  
FAX: (847) 279-2510

**FACSIMILE TRANSMISSION**

**Date:** October 28, 2002

<b>To:</b> Verneta Simon/Fred Micke	USEPA	Fax #: 312-353-9176
Kara Hughes	Lakeshore East, LLC	Fax #: 312-642-2773
Sean Bezark	Alzheimer & Gray	Fax #: 312-715-4800
Barbara Magel	Karaganis, White & Magel Ltd.	Fax #: 312-836-9083
Mark Krippel	Kerr-McGee Chemical LLC	Fax #: 630-231-3990

**Pages being transmitted, incl. Cover:** 7

**CC:** **Fax No.:**

**From:** Steve Komder **Phone:** 847-279-2500

**Re:** Lakeshore East, 221 N. Columbus Dr., Chicago, IL

☐ Urgent ☐ For Signature ☐ For Review ☐ Please Comment/Reply ☐ As Requested ☐ Original to Follow

**Message:**

Attached is the weekly report for the Lakeshore East site at 221 N. Columbus Drive in Chicago, IL.  
Please contact me with any questions.

**IMPORTANT:** This facsimile is intended only for the of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this facsimile is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return this facsimile to us at the above address via the United States Postal Service. Thank you.

**IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL (847) 279-2500 IMMEDIATELY**

**STS CONSULTANTS**STS Consultants, Ltd.  
750 Corporate Woods Parkway  
Vernon Hills, Illinois 60061-3153voice 847-279-2500  
fax 847-279-2510  
web www.stsconsultants.com

October 28, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois  
STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from October 21-25, 2002

1. No excavation activities occurred the week of October 21 because of a shipping container shortage. A summary of the excavated material is provided in the table below.

Impacted Soil Loading Summary	
Containers Load October 21-25, 2002	Cumulative Project Total
0	48

2. No area or personal air monitoring was performed at the site because of the absence of excavation activity. No exceedances of allowable limits were measured in the air monitoring conducted for the week of October 14-18, 2002 (see attached).

Planned Work for the October 28 - November 1, 2002

1. Excavation of radiologically-impacted soil will resume on Monday, October 28.
2. A drilling plan to determine the extent of the impacted materials below the water table in the vicinity of boring E-25 (refer to Work Plan Drawing 2) is currently scheduled to be conducted on Tuesday, October 29. Results will be available that day and will be forwarded to the USEPA latter in the week.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

Steven C. Kornder, Ph.D.  
Senior Project Geochemist

## Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

# **Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report** **341 East Ohio Street Project- Chicago, IL**

**North Monitor****Week #2 10/14/02-10/18/02****(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/14/02	408	1.28E-15	5.14E-13	
10/15/02	438	0.00E+00	0.00E+00	
10/16/02	403	6.02E-16	2.43E-13	
10/17/02	494	0.00E+00	0.00E+00	
10/18/02	362	0.00E+00	0.00E+00	
	2105	1.86E-15	7.57E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (North) = 3.59E-15 uCi/ml****Percentage of Release Limit of = 8.99%****4E-15uCi/ml****South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/14/02	410	0.00E+00	0.00E+00	
10/15/02	244	0.00E+00	0.00E+00	Shut down early on 10/15/02 due to mechanical failure in pump
10/16/02	399	0.00E+00	0.00E+00	
10/17/02	504	0.00E+00	0.00E+00	
10/18/02	376	0.00E+00	0.00E+00	
	1933	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (South) = 0.00E+00 uCi/ml****Percentage of Release Limit of = 0.00%****4E-15uCi/ml****East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/14/02	408	0.00E+00	0.00E+00	
10/15/02	446	5.78E-16	2.58E-13	
10/16/02	398	0.00E+00	0.00E+00	
10/17/02	498	0.00E+00	0.00E+00	
10/18/02	369	0.00E+00	0.00E+00	
	2117	5.78E-16	2.58E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly****Effluent Concentration (East) = 1.22E-16 uCi/ml****Percentage of Release Limit of = 3.04%****4E-15uCi/ml**

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/14/02	408	1.71E-15	6.90E-13	
10/15/02	425	0.00E+00	0.00E+00	
10/16/02	430	5.22E-16	2.24E-13	
10/17/02	509	9.16E-16	4.66E-13	
10/18/02	372	0.00E+00	0.00E+00	
	2144	3.15E-15	1.30E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

Eq A.9 NUREG 1400

<b>Time Weighted Weekly</b>	
Effluent Concentration (West) =	6.48E-16 uCi/ml
Percentage of Release Limit of =	18.18%



# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 2

October 14, 2002 - October 18, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit
							date analyzed	gross counts	big counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	big counts	net cpm	Concentration in uCi/ml	
N2005	10/14/02	7:30am	2:18pm	408	47	1.90E+07	10/16/02	77	11	2.2	4.17E-14	10/18/02	11	9	0.067	1.28E-15	31.62%
S2005	10/14/02	7:32am	2:22pm	410	52	2.11E+07	10/16/02	55	11	1.46667	2.50E-14	10/18/02	8	9	0	0.00E+00	0.00%
E2005	10/14/02	7:34am	2:20pm	406	48	1.93E+07	10/15/02	72	11	2.03333	3.80E-14	10/18/02	9	9	0	0.00E+00	0.00%
W1006	10/14/02	7:36am	2:24pm	408	52	2.10E+07	10/15/02	88	11	1.9	3.28E-14	10/18/02	12	9	0.1	1.71E-15	42.86%
N2006	10/15/02	7:27am	2:46pm	438	51	2.21E+07	10/16/02	106	10	6.86667	9.65E-14	10/21/02	8	11	0	0.00E+00	0.00%
S2006	10/15/02	7:20am	11:24am	244	52	1.28E+07	10/16/02	168	10	5.26667	1.51E-13	10/21/02	10	11	0	0.00E+00	0.00%
E2006	10/15/02	7:20am	2:48pm	448	47	2.08E+07	10/16/02	212	10	6.73333	1.17E-13	10/21/02	12	11	0.033	5.78E-16	14.46%
W2006	10/16/02	7:25am	2:38pm	425	51	2.15E+07	10/16/02	228	10	7.2	1.21E-13	10/21/02	6	11	0	0.00E+00	0.00%
N2007	10/16/02	7:40am	2:23pm	403	50	2.00E+07	10/17/02	31	10	0.7	1.26E-14	10/21/02	12	11	0.033	8.02E-16	15.04%
S2007	10/16/02	7:36am	2:15pm	388	50	1.98E+07	10/17/02	25	10	0.5	9.12E-15	10/21/02	10	11	0	0.00E+00	0.00%
E2007	10/16/02	7:37am	2:15pm	388	46	1.81E+07	10/17/02	28	10	0.6	1.19E-14	10/21/02	9	11	0	0.00E+00	0.00%
W2007	10/16/02	7:38am	2:40pm	430	54	2.30E+07	10/17/02	20	10	0.33333	5.22E-15	10/21/02	12	11	0.033	5.22E-16	13.05%
N2008	10/17/02	7:08am	3:22pm	494	52	2.55E+07	10/18/02	173	9	5.46667	7.74E-14	10/22/02	13	13	0	0.00E+00	0.00%
S2008	10/17/02	7:02am	3:28pm	504	46	2.30E+07	10/18/02	140	8	4.36667	6.85E-14	10/22/02	11	13	0	0.00E+00	0.00%
E2008	10/17/02	7:08am	3:24pm	498	47	2.32E+07	10/18/02	148	9	4.56667	7.10E-14	10/22/02	12	13	0	0.00E+00	0.00%
W2008	10/17/02	7:00am	3:29pm	508	52	2.62E+07	10/18/02	103	9	3.13333	4.31E-14	10/22/02	15	13	0.067	9.16E-16	22.91%
N2009	10/18/02	7:10am	1:12pm	382	50	1.78E+07	10/21/02	16	11	0.16667	3.35E-15	10/23/02	9	13	0	0.00E+00	0.00%
S2009	10/18/02	8:59am	1:15pm	378	60	2.24E+07	10/21/02	11	11	0	0.00E+00	10/23/02	12	13	0	0.00E+00	0.00%
E2009	10/18/02	7:05am	1:14pm	389	48	1.78E+07	10/21/02	18	11	0.16667	3.42E-15	10/23/02	13	13	0	0.00E+00	0.00%
W2009	10/18/02	8:58am	1:10pm	372	53	1.95E+07	10/21/02	14	11	0.1	1.845E-15	10/23/02	11	13	0	0.00E+00	0.00%

OCT-28-2002 08:29

STS Consultants, Ltd.

847 279 2535 P.05/07  
847 279 2535 P.01/03

**Lakeshore East Project - 221 North Columbus Drive, Chicago, IL**

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM#	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
10/14/02	Roger Petty	PAM2012	002-675	2.5	470	1175000	10/15/02	14	11	0.30	2.15E-14
10/14/02	Lindsay Aschim	PAM2013	006-234	2.5	453	1132500	10/15/02	20	11	0.30	6.68E-14
10/14/02	Jerry Krane	PAM2014	002-574	2.5	135	337500	10/15/02	11	11	0.00	0.00E+00
10/15/02	Roger Petty	PAM2015	002-574	2.5	388	965000	10/15/02	18	10	0.27	6.97E-14
10/15/02	Jerry Krane	PAM2016	002-675	2.5	330	825000	10/16/02	14	10	0.15	4.88E-14
10/15/02	Lindsay Aschim	PAM2017	002-675	2.5	150	375000	10/16/02	9	10	0.00	0.00E+00
10/16/02	Roger Petty	PAM2018	002-574	2.5	452	1130000	10/17/02	8	10	0.00	0.00E+00
10/16/02	Lindsay Aschim	PAM2019	006-234	2.5	443	1107500	10/17/02	10	10	0.00	0.00E+00
10/16/02	Jerry Krane	PAM2020	002-675	2.5	150	375000	10/17/02	9	10	0.00	0.00E+00
10/17/02	Jerry Krane	PAM2021	002-675	2.5	388	915000	10/18/02	15	9	0.20	5.52E-14
10/17/02	Roger Petty	PAM2022	002-766	2.5	346	865000	10/18/02	13	9	0.13	3.89E-14
10/19/02	Roger Petty	PAM2023	002-766	2.5	310	775000	10/21/02	17	11	0.20	6.51E-14
10/19/02	Jerry Krane	PAM2024	002-675	2.5	310	775000	10/21/02	9	11	0.00	0.00E+00

**Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.  
See attached 4 Day Analysis Form for Occupational Dose Limit Information.**

## Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 2 October 14 - October 18, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
10/14/02	Roger Petty	PAM2012	002-675	2.5	470	1175000	10/18/02	8	9	0.00	0.00E+00	0.00%
10/14/02	Lindsay Aschlm	PAM2013	006-234	2.5	453	1132500	10/18/02	9	9	0.00	0.00E+00	0.00%
10/15/02	Roger Petty	PAM2015	002-574	2.5	386	965000	10/21/02	8	11	0.00	0.00E+00	0.00%
10/15/02	Jerry Krane	PAM2016	002-675	2.5	330	825000	10/21/02	9	11	0.00	0.00E+00	0.00%
10/17/02	Jerry Krane	PAM2021	002-675	2.5	366	915000	10/22/02	13	13	0.00	0.00E+00	0.00%
10/17/02	Roger Petty	PAM2022	002-766	2.5	346	865000	10/22/02	11	13	0.00	0.00E+00	0.00%
10/18/02	Roger Petty	PAM2023	002-766	2.5	310	775000	10/23/02	10	13	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 =  $5E-13$  uCi/mlAdministrative Site Limit for Occupational Exposure = 30% Th-232 DAC =  $1.5E-13$  uCi/ml



October 21, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois  
STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from October 14-18, 2002

1. Excavation of radiologically impacted soils (Phase II) continued in southern (former) slip area. A total of 29 boxes of impacted soil were loaded.

**Impacted Soil Loading Summary**

Containers Load October 14 – 18, 2002	Cumulative Project Total
29	48

2. A verification survey was conducted following the removal of the radiologically-impacted soil within the southern slip at excavation coordinates F-J, 29-35 (refer to boring location E-56 of Work Plan Drawing 2). Verification and approval by USEPA that the excavation had achieved the cleanup goal was received on October 18, 2002.
3. Area and personal air monitoring were performed at the site. The results will be provided in the next weekly report. No exceedances of allowable limits were measured in the air monitoring conducted for the week of October 7-11, 2002 (see attached).

Planned Work for the October 21-25, 2002

1. No excavation of impacted soil will occur during the week of October 21 because of a shortage of transport boxes. Plans are to resume excavation activities the week of October 28.
2. A drilling plan to determine the extent of the radiologically-impacted materials below the water is being prepared since it appears that impacted material extends below the water table at boring E-25 (refer to Work Plan Drawing 2). When complete, this plan will be forwarded to the USEPA for review and approval.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

 (fn)

Steven C. Kornder, Ph.D.  
Senior Project Geochemist

Attachments

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Alzheimer & Gray

Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

# **Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report** **341 East Ohio Street Project- Chicago, IL**

## **North Monitor**

**Week #1 10/7/02-10/11/02**

**(High Volume)**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/7/02	0	0.00E+00	0.00E+00	No Work - Training Day
10/8/02	200	9.78E-16	1.96E-13	
10/9/02	443	0.00E+00	0.00E+00	
10/10/02	251	0.00E+00	0.00E+00	
10/11/02	499	0.00E+00	0.00E+00	
	1393	9.78E-16	1.96E-13	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$\sum T_i$

Eq A.9 NUREG 1400

## **Time Weighted Weekly**

**Effluent Concentration (North) = 1.40E-16 uCi/ml**

**Percentage of Release Limit of = 3.51%**  
**4E-15uCi/ml**

## **South Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/7/02	0	0.00E+00	0.00E+00	No Work - Training Day
10/8/02	212	0.00E+00	0.00E+00	
10/9/02	455	1.05E-15	4.78E-13	
10/10/02	237	2.74E-15	6.49E-13	
10/11/02	492	8.80E-16	4.33E-13	
	1396	4.67E-15	1.56E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$\sum T_i$

Eq A.9 NUREG 1400

## **Time Weighted Weekly**

**Effluent Concentration (South) = 1.12E-15 uCi/ml**

**Percentage of Release Limit of = 27.94%**  
**4E-15uCi/ml**

## **East Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/7/02	0	0.00E+00	0.00E+00	No Work - Training Day
10/8/02	207	0.00E+00	0.00E+00	
10/9/02	422	0.00E+00	0.00E+00	
10/10/02	236	0.00E+00	0.00E+00	
10/11/02	489	0.00E+00	0.00E+00	
	1354	0.00E+00	0.00E+00	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$\sum T_i$

Eq A.9 NUREG 1400

## **Time Weighted Weekly**

**Effluent Concentration (East) = 0.00E+00 uCi/ml**

**Percentage of Release Limit of = 0.00%**  
**4E-15uCi/ml**

**West Monitor**

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
10/7/02	0	0.00E+00	0.00E+00	No Work - Training Day
10/8/02	207	0.00E+00	0.00E+00	
10/9/02	443	1.61E-15	7.13E-13	
10/10/02	254	1.84E-15	4.67E-13	
10/11/02	480	0.00E+00	0.00E+00	
	1384	3.45E-15	1.18E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

**Time Weighted Weekly**

Effluent Concentration (West) = 8.53E-16 uCi/ml

Percentage of Release Limit of = 21.33%

# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

Week 1

October 7, 2002 - October 11, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
No Work on 10/7/02 - Training Only																	
N2001	10/8/02	1:25pm	4:45pm	200	62	1.23E+07	10/9/02	39	13	0.86667	2.54E-14	10/14/02	13	12	0.033	9.78E-16	24.45%
S2001	10/8/02	1:20pm	4:52pm	212	80	1.26E+07	10/9/02	55	13	1.4	4.00E-14	10/14/02	11	12	0	0.00E+00	0.00%
E2001	10/8/02	1:23pm	4:50pm	207	47	9.64E+06	10/9/02	42	13	0.96667	3.61E-14	10/14/02	11	12	0	0.00E+00	0.00%
W1001	10/8/02	1:25pm	4:52pm	207	52	1.07E+07	10/9/02	39	13	0.86667	2.93E-14	10/14/02	10	12	0	0.00E+00	0.00%
N2002	10/9/02	7:22am	2:45pm	443	57	2.50E+07	10/10/02	241	12	7.63333	1.1E-13	10/14/02	11	12	0	0.00E+00	0.00%
S2002	10/9/02	7:05am	2:40pm	455	51	2.30E+07	10/10/02	99	12	2.9	4.546E-14	10/14/02	14	12	0.067	1.05E-15	26.13%
E2002	10/9/02	7:40am	2:42pm	422	48	1.92E+07	10/10/02	123	12	3.7	6.933E-14	10/14/02	12	12	0	0.00E+00	0.00%
W2002	10/9/02	7:24am	2:47pm	443	51	2.24E+07	10/10/02	175	12	5.43333	8.748E-14	10/14/02	15	12	0.1	1.61E-15	40.25%
N2003	10/10/02	7:13am	11:24am	251	55	1.37E+07	10/11/02	134	9	4.16667	1.096E-13	10/15/02	10	11	0	0.00E+00	0.00%
S2003	10/10/02	7:27am	11:24am	237	56	1.32E+07	10/11/02	170	9	5.36667	1.471E-13	10/15/02	14	11	0.1	2.74E-15	68.52%
E2003	10/10/02	7:27am	11:23am	236	55	1.29E+07	10/11/02	163	9	5.13333	1.439E-13	10/15/02	9	11	0	0.00E+00	0.00%
W2003	10/10/02	7:10am	11:24am	254	52	1.31E+07	10/11/02	139	9	4.33333	1.193E-13	10/15/02	13	11	0.067	1.84E-15	45.90%
N2004	10/11/02	7:00am	3:19pm	499	48	2.37E+07	10/14/02	18	12	0.2	3.037E-16	10/16/02	10	10	0	0.00E+00	0.00%
S2004	10/11/02	7:10am	3:22pm	492	56	2.73E+07	10/14/02	24	12	0.4	5.281E-15	10/16/02	12	10	0.067	8.80E-16	22.00%
E2004	10/11/02	7:12am	3:21pm	489	52	2.52E+07	10/14/02	14	12	0.06667	9.537E-16	10/16/02	9	10	0	0.00E+00	0.00%
W2004	10/11/02	7:15am	3:15pm	480	55	2.82E+07	10/14/02	18	12	0.2	2.756E-15	10/16/02	10	10	0	0.00E+00	0.00%

# Personal Air Monitoring Summary Sheet (PAM's -Daily Analysis)

Week 1 October 7 - October 11, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\* All PAM's with elevated counts on day after analysis are recounted after 4 days (see attached)

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)
10/8/02	Roger Petty	PAM2001	002-574	2.5	220	550000	10/9/02	10	13	0.00	0.00E+00
10/8/02	Jerry Krane	PAM2002	002-675	2.5	220	550000	10/9/02	12	13	0.00	0.00E+00
10/9/02	Roger Petty	PAM2003	002-788	2.5	477	1192500	10/10/02	14	12	0.07	1.41E-14 *
10/9/02	Jerry Krane	PAM2004	002-574	2.5	310	775000	10/10/02	19	12	0.23	7.60E-14 *
10/9/02	Lindsay Aschim	PAM2005	002-574	2.5	136	340000	10/10/02	11	12	0.00	0.00E+00
10/10/02	W. Concepcion	PAM2006	002-574	2.5	280	650000	10/11/02	15	9	0.20	7.76E-14 *
10/10/02	Jerry Krane	PAM2007	002-788	2.5	165	412500	10/11/02	9	9	0.00	0.00E+00
10/10/02	Lindsay Aschim	PAM2008	002-788	2.5	84	210000	10/11/02	9	9	0.00	0.00E+00
10/11/02	W. Concepcion	PAM2009	006-234	2.5	505	1262500	10/14/02	12	12	0.00	0.00E+00
10/11/02	Lindsay Aschim	PAM2010	002-675	2.5	500	1250000	10/14/02	10	12	0.00	0.00E+00
10/11/02	Jerry Krane	PAM2011	002-574	2.5	150	375000	10/14/02	9	12	0.00	0.00E+00

Note: Official airborne Th-232 concentrations are obtained from 4 Day Analysis.

See attached 4 Day Analysis Form for Occupational Dose Limit Information.



# Personal Air Monitoring Summary Sheet (PAM's -4 Day Analysis)

Week 1 October 7 - October 11, 2002

Lakeshore East Project - 221 North Columbus Drive, Chicago, IL

\*\*\*Note: All samples on this page were analyzed after 4 days to allow for thorium daughter decay

Date Collected	Name	Sample ID	PAM #	Flow Rate (lpm)	Total Time Sampled	Total Sample Volume (ml)	Analysis Date	Gross Counts (30 min)	Bkg Counts (30 min)	Net CPM	Sample Concentration (uCi/ml)	% of DAC
10/9/02	Roger Petty	PAM2003	002-786	2.5	477	1192500	10/14/02	9	12	0.00	0.00E+00	0.00%
10/9/02	Jerry Krane	PAM2004	002-574	2.5	310	775000	10/14/02	12	12	0.00	0.00E+00	0.00%
10/10/02	W. Concepcion	PAM2006	002-574	2.5	260	650000	10/15/02	11	11	0.00	0.00E+00	0.00%

Occupational Dose Limit for Occupational Radiation Exposure = 5 rem Total Effective Dose Equivalent

2000 DAC-Hours = 5 rem

DAC (Derived Air Concentration) for Th-232 = 5E-13uCi/ml

Administrative Site Limit for Occupational Exposure = 30% Th-232 DAC = 1.5E-13 uCi/ml



October 17, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois  
STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

**Work Completed from October 7 - 11, 2002**

1. Site-specific project training was conducted at the site on Monday, October 7, 2002.
2. Pursuant to the verbal approval of the work plan by USEPA (October 4, 2002) excavation of radiologically impacted soils (Phase II) began at the largest of the three impacted area in southern (former) slip area on Tuesday, October 8, 2002. A total of 19 boxes of impacted soil were loaded.
3. Calibration of the lab equipment moved to site was completed.
4. Background air monitoring results for site was conducted from September 16 – 23, 2002. A copy of the results is attached. Results for this week will be forwarded with next weeks report.

**Planned Work for the October 14 - 18, 2002**

1. Excavation of impacted soils within the southern (former slip) area will continue.
2. Anticipate receipt from USEPA of written approval of Work Plan.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

Steven C. Kornder, Ph.D.  
Senior Project Geochemist

**Attachments**

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel  
Mark Krippel, Kerr-McGee Chemical LLC

# Area Air Monitoring Summary Sheet - Staplex High Volume Pumps (Daily Analysis)

Lake Shore East Project - Chicago, IL

## Background Sampling September 16, 2002 - September 23, 2002

Sample ID	date sampled	start time	stop time	total time sampled	cubic ft/ min (CFM)	sample volume analyzed	day after analysis					four day analysis					% of Limit 4.00E-15 uCi/ml
							date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	date analyzed	gross counts	bkg counts	net cpm	Concentration in uCi/ml	
BKG001	9/16/02	7:52am	4:47pm	535	45	2.39E+07	9/17/02	51	16	1.18667	1.79E-14	9/20/02	16	20	0	0.00E+00	0.00%
BKG002	9/17/02	7:21am	4:38pm	557	42	2.32E+07	9/18/02	131	18	3.76667	5.96E-14	9/23/02	19	18	0.033	5.27E-16	13.18%
BKG003	9/18/02	7:17am	4:32pm	555	45	2.48E+07	9/19/02	184	17	5.56667	8.25E-14	9/23/02	17	18	0	0.00E+00	0.00%
BKG004	9/20/02	7:18am	7:05am*	4307	37	1.58E+08	9/24/02	135	16	3.96667	9.21E-15	9/27/02	22	17	0.167	3.87E-16	9.67%

\*7:05am on 9/23/02

NOTE: - BKG004 was sampled through the weekend from Friday September 20 until Monday September 23  
- Sample was taken four feet off of the ground surface on the north side of the LSE Maintenance Bldg.

## Area Air Monitoring Summary Sheet - Weekly Effluent Concentration Report

Lake Shore East Project- Chicago, IL

### BACKGROUND AIR MONITOR

(High Volume)

Date	Time Sampled (minutes)	Effluent Concentration in uCi/ml	Concentration x Sample Min / Day	Comments
9/16/02	535	0.00E+00	0.00E+00	No Sample Collected Due to Rain
9/17/02	557	5.27E-16	2.94E-13	
9/18/02	555	0.00E+00	0.00E+00	
9/19/02	0	0.00E+00	0.00E+00	
9/20/02	4307	3.87E-16	1.67E-12	
	5954	9.14E-16	1.96E-12	

$$C_{avg} = \frac{\sum T_i C_i}{\sum T_i}$$

$$\sum T_i$$

Eq A.9 NUREG 1400

### Time Weighted Weekly

Effluent Concentration (North) = 3.29E-16 uCi/ml

Percentage of Release Limit of = 8.23%  
4E-15uCi/ml

10/14/02 MON 11:07 FAX 815 485 4433  
DCT-14-2002 12:40 STS

STAN HUBER CONS.

847 279 2535 P.07/07  
007



October 7, 2002

Ms. Verneta Simon, On-Scene Coordinator  
Mr. Fred Micke, On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard, SE-5J  
Chicago, Illinois 60604-3590

Re: Weekly Report - Lakeshore East Site, 221 North Columbus Dr., Chicago, Illinois  
STS Project No. 1-32193-XC

Dear Ms. Simon and Mr. Micke:

In accordance with the USEPA's request, STS Consultants, Ltd. (STS) is providing a weekly update of the work completed during the previous week and the planned activities for the upcoming week.

Work Completed from September 30 – October 4, 2002

1. A revised work plan dated September 30, 2002, was submitted to USEPA October 2, 2002. The work plan included the response to USEPA comments as indicated in the letter of September 20, 2002. STS received verbal approval to begin to implementation of the work plan on October 4, 2002.
2. A utility meet (#227320998) was held at the site to identify excavation locations that the utilities will mark on Monday October 7, 2002.
3. Laboratory equipment moved to site.
4. Completed background air monitoring, results will be included with the initial air monitoring results.

Planned Work for the October 7-- 11, 2002

1. Site-specific project training meeting to discuss the project activities and associated health and safety issues will be held at the site beginning at 8:00 am on Monday, October 7, 2002.
2. Pursuant to the verbal approval of the work plan by USEPA on October 4, 2002, it is anticipated that excavation of radiologically impacted soils (Phase II) will begin in the southern portion of the site on Tuesday, October 8, 2002.

Please contact us at 847-279-2500 with any questions regarding this report.

Regards,

STS CONSULTANTS, LTD.

Steven C. Kornder, Ph.D.  
Senior Geochemist

cc: Kara Hughes, Lakeshore East, LLC  
Sean Bezark, Altheimer & Gray  
Barbara Magel, Karaganis, White & Magel Ltd.  
Mark Krippel, Kerr-McGee Chemical LLC